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VOL. XIV.

ORNITHOLOGY.

GALLINACEOUS BIRDS.

BY THE EDITOR.

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MEMOIR

OF

ARISTOTLE.

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ARISTOTLE.

MEMOIR OF ARISTOTLE.

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THERE are few names in the annals of antiquity, or in the wide circle of classic literature, more celebrated than that of Aristotle. In an age which could boast of Demosthenes, Socrates, and Plato, and in a country distinguished beyond all others for the cultivation of knowledge, he bore away the palm of genius from every competitor; and although there are many departments of science wherein his labours have been surpassed by those of modern philosophers, there are others in which his profound erudition, and his amazing intellectual exertions, remain hitherto unrivalled. His comprehensive mind embraced every subject which then formed a part of scholastic study, or fell within the range of human contemplation. Accordingly, of all the ancient Greek writers, he is at once the most voluminous, diversified, and obscure. His works, like those of many other classic authors, have descended to us in a corrupted and mutilated shape; and though now rather admired than read or understood, they still maintain the reputation of being an encyclopædia of

all that is curious or valuable in science and philosophy as they existed in Greece, when Greece, for learning and arts, was the most illustrious country in the world. At an early period of its history, the wisdom of the East, including the dark traditions of Egypt and India, with their mythology, geometry, and astronomy, were imported by native travellers, whom the gratitude of their fellow-citizens dignified with the title of *Sophi*, or wise men, on account of their extraordinary pre-eminence in natural and moral knowledge. For many centuries the vestal fires of this adopted literature continued to burn with increasing splendour in the schools of Athens, Corinth, and Megara, under a succession of able masters, most of whom were the founders of distinct sects, who adopted their name and opinions. At the time when Aristotle appeared, the prevailing sects were the Ionic, the Socratic, the Cyrenaic, the Megaric, the Academic, and the Peripatetic; each of which had its partisans, and generally flourished or declined according to the celebrity of its teachers.

About a century before the reign of Alexander, speculative philosophy had assumed a new and more systematic form; many of its fanciful theories had been exploded; a more rational method of instruction was introduced, by treating the different subjects, whether in ethics, physics, or politics, under their proper subdivisions; all of which were studied in the Grecian academies with a rivalry and enthusiasm unparalleled perhaps in the history of civilized

nations. This improved philosophy was carried to its highest perfection by Aristotle, in whose writings the doctrines of his predecessors and the learning of his age, were summed up and embodied as it were into one entire library. Of his indefatigable industry and extensive information, his copious remains, even in their abridged state, afford ample and honourable testimony; and as for his talents, it would be disrespectful to mankind, as Dr Reid well remarks, not to allow an uncommon share to a man who governed the opinions of the most enlightened part of the species, for nearly two thousand years. Among his contemporaries he was regarded as "Nature's Secretary," the high priest of science, and the prince of philosophers. During the darker ages, his dogmas reigned in the universities of Christendom with undisputed sway. His memory was worshipped with a veneration almost divine, insomuch that he has sometimes been placed by the side of the Apostle of Tarsus; for our countryman Roger Bacon, in his Opus Majus, has said, that "he hath the same authority in philosophy, that St Paul hath in divinity."

The age of superstitious reverence for categories and syllogisms has long passed away; and the renowned Stagirite, like other writers, must be weighed in the balance of his own merits, instead of being measured by the standard of ignorant admiration. A line of demarcation can now easily and safely be drawn between those portions of his works that are still deserving of attention, and those which have

been superseded by the gradual advancement of the human mind in intellectual and physical knowledge.

Before proceeding, however, to give an analysis of his writings, it will be proper to relate what has been recorded of his life and character. Several of his own countrymen discharged the friendly task due to his genius, by becoming his biographers; but their memoirs, except a few fragments, have perished in the general wreck of antiquity. Whatever is now known concerning this remarkable man, must be gleaned from the meagre and often contradictory notices to be found in the pages of Diogenes Laertius, Dionysius Halicarnassus, Hesychius the Milesian, Suidas, Ammonius, and a few others of more doubtful authenticity. Modern writers have not thrown much additional light on the subject, and their efforts have accomplished little more than attempting to reconcile what is discordant, or rejecting what is improbable, in the statements of the ancients.

Aristotle was born at Stagira, a city and sea-port of Macedonia, about the beginning of the 99th Olympiad, and 384 years before the Christian era. The place of his birth, which derives its chief celebrity from being associated with his name, and which, but for this fortunate accident, might have been blotted from the geography of Europe, was situated on the Strymonic Gulf, and long numbered among the Greek cities of Thrace; but in the reign of Philip it belonged to Macedon, as the conquests of that monarch had extended the name of his country far

beyond the river Strymon to the confines of Mount Rhodope. The town possessed a harbour with a small island, named Kapros; and, like some of the neighbouring cities, enjoyed the precarious dignity of an independent government. In the Peloponnesian war, it was the ally of Athens, and afterwards became subject to the commonwealth of Olynthus, which, in its turn, was attacked by Philip; and, with all its dependencies, reduced by the arms or arts of that ambitious prince, in the first year of the 108th Olympiad. That the resistance of Stagira was obstinate, may be inferred from the severity of its punishment, for the conqueror, as we learn from Plutarch, ordered it to be razed to the ground.

The parentage of Aristotle was highly respectable. His father Nicomachus was descended in direct line from Machaon, whose skill in physic is celebrated by Homer, and who was son to Æsculapius, the companion of the Argonauts, exalted after his death to a place among the gods as the tutelary deity of the healing art. Nicomachus followed the profession of his father and his ancestors, and even improved that branch of hereditary knowledge, by writing six books on medicine, and one on natural philosophy. He was the physician and friend of Amyntas, King of Macedon, who held him in peculiar esteem. The circumstance of this medical pedigree has led one writer, Tzetzes, to allege that Aristotle was called an *Æsculapian* figuratively, and not by descent; but there seems no reason to call in question the common account of his genealogy. His

mother, whose name was Phæstis, some have traced to the same illustrious origin as her husband; but whatever was her extraction, her acknowledged country was Eubœa, or Chalcidica, her father, as Dionysius Halicarnassus asserts, being one of the colony which was sent from Chalcis to Stagira* It was the misfortune of Aristotle to lose his parents at a very early age, a fact that Dr Reid seems to have overlooked when he mentions his being brought up at the Court of Macedon, as among the "many uncommon advantages" which he enjoyed. At what precise period that event happened, or what progress he had then made in his education, it is now impossible to ascertain; but, as one of his modern biographers has remarked, it is an agreeable, and not altogether an unwarranted, conjecture, that his father had inspired him with a taste for his own profession, and especially with that ardent love for the study of Nature, which made him long be regarded as her best and chosen interpreter; while from his mother he imbibed that attic elegance and purity which everywhere pervades his writings. His gratitude and affection to her he displayed, by causing her picture to be drawn by Protogenes, an eminent painter of that time, which Pliny reckoned as among the choicest pieces of that master.

The early loss of his parents was supplied and compensated by the kind attentions of Proxenus, a

* It appears from Laertius, that Aristotle had two brothers, Arimnestus and Arimnestes, and a sister called Hero.

citizen of Atarna, in Mysia, who received the young philosopher into his family, and skilfully directed his education. These important services the grateful pupil afterwards requited. Statues were erected at his expense in honour of Proxenus and his wife; their child Nicanor he adopted as his own son, and by his will left him a handsome property.

On the death of his benefactor, Aristotle removed to Athens, being then in his seventeenth year. There is some difference of opinion as to his pursuits and mode of life at this period, and also as to the cause of his enrolling himself a student of the Academy. Athenæus and Ælian relate that, having wasted the inheritance left him by his father in prodigality and luxury, he adopted a military life; that, failing of success, he had recourse to the selling of drugs, in which capacity, it is alleged, he visited Athens, where he accidentally entered the school of Plato, and being charmed with his wisdom, determined to become a disciple of that renowned teacher. This account, however, considering the tender years of Aristotle, is altogether improbable; nor does it accord with the circumstances of his history, as narrated by authors of unimpeachable credit. Equally erroneous is the assertion, that he was for three years the scholar of Socrates, since the latter died at least eight years before the Stagirite was born. The story of his being led to study philosophy in obedience to the advice of the Pythian oracle, must be classed among the fictions of a credulous age.

A sufficient reason for his resorting to the Academy, may be found in the celebrity of Plato, whose school at that time was the most famous in the world, and long continued to be the centre of attraction for all the learning and genius of Greece. The master was not slow to discover and appreciate the extraordinary talents of his pupil. He admired his acuteness of apprehension, and often applauded his unwearied application to study. In compliment to his superior abilities, he called him the "soul of his school;" and when he happened to be absent, he used to complain that his lectures were addressed to a "deaf audience." His industry in perusing and copying manuscripts, was unexampled and almost incredible. From this circumstance he was called, by way of eminence, the "student," and his house was styled the "house of the great reader." As he advanced in years, his penetration was as remarkable in canvassing opinions, as his diligence had been unrivalled in collecting them. His capacious mind, we are told, embraced the whole circle of science; and notwithstanding his pertinacity in rejecting every principle or tenet which he could not on reflection approve, his singular merits failed not to secure the love and admiration of his venerable instructor, with whom he continued to reside for twenty years, until their friendship was dissolved by the death of the latter. Such was his eagerness in the acquisition of knowledge, that he devoted to it the best part of his life,—alike careless of the honours and emoluments of a court,

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which the rank and connexion of his family might have procured him in Macedon; and indifferent to the high distinction which his splendid abilities might easily have attained, by establishing a separate school, and founding a new sect in philosophy. It has been alleged, indeed, that various circumstances occurred to interrupt the harmonious intimacy between him and his master. Some have affirmed that he offended the gravity of Plato by his foppery in dress, and his excessive fondness for ostentatious ornament. His mantle was gaudy; he wore sandals of rich materials, and rings of great value on his fingers; his head and chin were closely cropped, contrary to the rule or the fashion of the Academy, which required the hair and beard of its disciples to be worn of their natural length.

These may appear trivial causes of virtuous indignation; but when we reflect, that, in ancient times, the shagginess of the human countenance was not only an indispensable requisite, but the legal standard for ascertaining the depth of wisdom and learning, such a contempt for scholastic usages must have subjected the offender to the reproach and resentment of his contemporaries. This imputed love of finery, however, was only assumed, perhaps, to conceal the defects of his figure, as his stature was short, and his limbs disproportionably slender. Certain it is, that his anxiety to adorn his person abated nothing of his assiduity in the embellishment of his mind. His attention to dress (probably much exag-

gerated by his enemies) was in him merely an accessory which neither altered his character, nor weakened that ardent desire for knowledge, which, even in the vigour of manhood, and amidst the gaieties of Athens, continued to be the master passion of his soul. There are other reasons of discord stated by Laertius, who says, that Plato disliked the scornful derision of his looks, and could not endure his impertinent contradiction of his prelections; on which account his friendship was withdrawn, and transferred to more submissive pupils. The repudiated favourite, he adds, opened a school in the Lycæum, in opposition to his master; at which the indignant sage severely remarked, that his ungrateful disciple resembled "the young foals that kicked their dams when they had sucked their fill;" and, from this circumstance, Aristotle was usually called the Colt. These charges, however, are generally admitted to have been malicious aspersions cast upon his memory, and invented after his death. Their origin is ascribed to Aristoxenus, who took this method of revenge, because Aristotle refused to make him successor in his school, having given the preference to Theophrastus. That he contradicted Plato, and perplexed him with ingenious sophistries, is highly probable, considering the boldness with which he determines questions beyond the reach of human intellect; but, as Ammonius observes, this is nothing wonderful, since Plato frequently contradicts himself. As for the assertion, that he was guilty of

ingratitude to his instructor, by commencing to teach in opposition to him, it is altogether unfounded. Nothing is more unlikely than that he would have ventured on such a perilous step, at a time when the power of Chabrias and Timotheus, Plato's kinsmen, was almost absolute at Athens. We have the evidence of his own epistle to Philip, that he was a constant and sedulous hearer of this great philosopher as long as he lived. In his writings he makes honourable mention of him; and, after his death, he erected, in testimony of his unchanged affection, an altar bearing an inscription which may be thus translated:

> "This sacred shrine to Plato's name is rear'd,
> Which grateful Aristotle long rever'd!
> Far hence, ye vulgar! nor presume to stain
> With impious praise, this consecrated fane."

Olympiodorus mentions, that he composed a whole discourse in his commendation; and, in his Elegies to Eudemus, he extols him in language as affectionate as it is complimentary.

> "And, coming to the famed Cecropian town,
> In sign of friendship did an altar raise
> To him whom none with lips profane dare praise;
> Who erring man to virtue did restore,
> Much by his precepts, by example more.
> A sage so pious, loved of gods and men,
> No future age must hope to see again."

These and other affectionate tokens of regard to the memory of his master, afford a presumption, amounting almost to certainty, that there is no truth

in the assertion that he gave offence to Plato by his effeminate dress and impertinent loquacity, or that he drove him from the Academy in his old age, and took possession of his chair, until he was himself expelled by Xenocrates.

Plato died in the first year of the 108th Olympiad, and 338 before the Christian era, at the age of 81. Whether the venerable philosopher cherished a reciprocal esteem for his illustrious pupil, is doubted by some, who have alleged that he was jealous of his rising talents, and afraid lest his own celebrity should be eclipsed by that of a rival. In corroboration of this supposition, it has been observed that he nowhere mentions him in his writings; and that, at his death, he did not appoint him his successor in the Academy, although confessedly the most distinguished of all his scholars in learning and talents, but nominated Speusippus to that situation,—a man far his inferior in abilities, temper, and moral character. It does not appear, however, that these allegations are better founded than the charges of his avowed detractors, already referred to. Speusippus was the nephew of Plato, being the son of his sister Potona; his preference to Aristotle was therefore natural; nor is there the slightest evidence that the Stagirite took offence that, in this appointment, the strong claim of merit should have been sacrificed to the partial feelings of consanguinity. On the contrary, the altars and verses consecrated to his memory, evince that his attachment to his teacher had suffer-

ed no diminution; and in some of his latest writings, he speaks of him with a degree of admiration approaching to reverence.

The demise of his master gave Aristotle an opportunity of founding a separate school, but why he neglected to avail himself of it, or why he chose to abandon the scene of his studies, can only be matter of conjecture. Perhaps the connections which he had formed with some of the most eminent, as well as the most extraordinary, personages of his own or any age, might have inspired him with the design of leaving Athens, after he had lost the philosopher and friend whose reputation had first drawn him thither, and whose instructive society had so long retained him in that celebrated capital.

Among his condisciples at the Academy, was a eunuch named Hermias, with whom he maintained a close and uninterrupted correspondence, and whose history forcibly illustrates the capricious vicissitudes of fortune. He was originally the slave of Eubulus, a prince and philosopher of Bithynia; but his spirit was unbroken by servitude, and he possessed a mind far above the humble condition of his birth. Through the bounty of his indulgent patron, he was enabled early to gratify his natural taste for learning, by resorting to Athens, where he formed an acquaintance with the young Stagirite, which soon united them in the bonds of mutual esteem, and finally settled down into a cordial and unalterable friendship. But the calm retreats of science were abandoned for the

more dangerous pursuits of ambition. His enterprising courage, seconded by good fortune, raised him to the sovereignty of two Greek cities of Mysia, Assus and Atarna, the former lying in the district of Troas, the latter in that of Æolis; and both of them, like most Grecian colonies on the Asiatic coast, but loosely dependent on the Persian empire. His successful boldness in usurping the sceptre, was only equalled by the manly firmness with which he held it; and as the armies of Artaxerxes were distant, he found little difficulty in maintaining peaceful possession of it for a time.

It was upon the invitation of his now royal friend and companion, that Aristotle, immediately after the death of Plato, repaired to Atarna; and his resolution was probably influenced by the fond desire of revisiting the spot where he had spent the happy years of his youth, under the kind protection of Proxenus. In that city he found the wish of Plato realized; he beheld in his friend Hermias philosophy seated on a throne. With him he resided nearly three years, receiving the warmest testimonies of love and respect, and enjoying the inexpressible pleasure of seeing his own enlightened political maxims exemplified in the virtuous reign of his fellow-student. But the seat of the usurper is generally insecure, and so it proved with Hermias. Artaxerxes having subdued the rebels in Egypt, determined to restore to his dominion the dismembered cities of Mysia. Mentor, a General whose zeal and

valour are recorded in the Persian annals, was employed as the fittest instrument for accomplishing the task. This apostate and unprincipled Greek was numbered among the friends of Hermias, and connected with him by the sacred ties of hospitality; but the breast of a renegade and traitor is alike insensible to the feelings of honour and the obligations of gratitude. His former intimacy was made the means of facilitating the cruel stratagem. The unwary prince was decoyed to an interview, where he was seized by Mentor in person, and sent privately to Upper Asia, until an order arrived from Artaxerxes for his execution. The base artifices of the betrayer ended not with this atrocity. Having possessed himself of the ring which Hermias usually employed as his signet, he sealed with it despatches to the different cities that acknowledged his authority; and by this false key their gates were opened without suspicion to the Persian soldiers. The perfidy of Mentor, which thus insidiously compassed the ruin and death of his friend, Aristotle has himself branded with deserved infamy, when, in one of his treatises, he contrasts the dexterity of this successful knave with the real virtue of prudence. His gratitude to this generous benefactor he celebrated in verse, by writing a hymn to his praise, and erecting a statue to his memory, in the Temple at Delphi, which bore an inscription, in allusion to the disreputable means by which he was cut off.

This man by hands dishonourable slain,
The faithless Persian king his victim made;
Not as the hero falls on battle plain,
But under friendship's hollow mask betrayed.

There were certain detractors who attempted to give his virtuous friendship for Hermias the colouring of a criminal attachment; but their reports obtained little credit at the time, and are now discarded as notorious calumnies. Theocritus of Chios, a Greek historian who wrote an account of Libya, carried his obloquy so far, as to satirise both his moral character, and his public testimonial to Hermias, in a severe epigram, thus rendered:

An empty shrine to Eubulus's slave
The amorous eunuch—Aristotle gave,
Himself as empty; who, from brute desire,
Forsook the school for pleasure's filthy mire.

These scandalous imputations were answered by Apellicon, a philosopher of Teios, who wrote several books on purpose, wherein he elaborately confutes those who dared, in this manner (as he expresses it) "to blaspheme the name of so great a man."

The moderate policy which Mentor, in his first transactions at Atarna, found it necessary to assume, enabled Aristotle to avoid the punishment which naturally overtook the ambition of his friend. By a timely flight he escaped to Mitylene, in the island of Lesbos, in company with Pythias, the kinswoman and adopted daughter of Hermias, whom that prince

had educated, and destined to become the heiress of his fortunes. Her expectations were now miserably reduced; but this sad reverse endeared her the more to Aristotle, who espoused his fair companion, for whom he entertained a sincere attachment. He was then in his thirty-seventh year, which is precisely the age recommended by himself as the fittest on the male side for entering into wedlock. The lady did not long survive her marriage, but she left an infant daughter whom the father named after a wife tenderly beloved, and who repaid his affection with the most tender sensibility. It is mentioned by Diogenes Laertius, as her last request, that when her husband should die (which might the fates long avert!) her own ashes were to be disinterred, and enclosed with his in the same monument.

Aristotle passed but a short time in the Island of Lesbos, his celebrity being now too well known to allow him much leisure for the indulgence either of love or melancholy. His father's name and his own were familiar at the court of Macedon; and, during his residence in Athens, he had strengthened his hereditary friendship with Philip, a prince only one year younger than himself, who, having lived from the age of fifteen to twenty-two in Thebes, and the neighbouring cities, had ascended the throne of his ancestors in the twenty-third year of his age. This circumstance of itself may account for the application which that monarch made to Aristotle, to undertake the education of his son Alexander, who,

even from his boyhood, had given symptoms of those extraordinary talents which have made his actions as a conqueror so familiar to posterity. It has been alleged, on the authority of Laertius, that, while a student at the Academy, he had been sent by the Athenians on an embassy to Philip, to implore his forbearance in behalf of the Grecian cities, which he then threatened to subject to the yoke of his military despotism; and that, having succeeded in his mission, his grateful fellow-citizens decreed his statue to be placed in the Acropolis, as a benefactor to the Republic. It is more than probable, however, that these statements have arisen from a slight anachronism, and that the Athenians had used his influence with Philip to spare their freedom, not before but after he had become an inmate of his family. This circumstance may have occasioned the erection of a statue to his memory, in remembrance of the services which he then rendered the State.

It was in the fifth year of his father's reign that Alexander was born. Several tutors or preceptors had been employed in training his infant mind, at the head of whom was Leonidas, a kinsman of the queen. But Philip early perceived, that the education of his son was a matter of too great importance to be entrusted to ordinary masters. Music, dancing, and such-like accomplishments, he found to be unsuitable to his genius, which, as Sophocles has said, required

"The rudder's guidance, and the curb's restraint."

Accordingly, he addressed himself to Aristotle, in a letter as flattering to his literary fame as was the compliment paid by Queen Elizabeth to Sir Isaac Newton. This epistle is recorded by Agellius in the following terms:

"PHILIP to ARISTOTLE—Health.—Know that I have a son. I render the gods many thanks, not so much for his birth, as that he was born at the time when Aristotle lives; for I am assured that, if educated and instructed by you, he will become worthy of us, and worthy of the kingdom which he inherits."

In compliance with this kingly request, Aristotle set sail from Lesbos, and escaping the danger of the Athenian fleet, then at war with Macedon, he arrived at Pella, to undertake one of the few employments not unworthy of a philosopher qualified to instruct and benefit the latest ages of the world. In the tuition of his illustrious pupil, he spent about eight years, during which long period, in an office replete with difficulty and delicacy, he had the rare honour of giving the highest satisfaction to the royal parents, while he excited in the breast of their son feelings of the warmest gratitude. He was treated, both by Philip and his proud queen Olympias, with every mark of distinction that greatness could bestow on acknowledged merit. He was admitted to an extensive share in the government, and allowed a voice in the counsels of his sovereign, where his advice was often useful, and always acceptable. On these occasions he was not slack to exert his kind inter-

cessions in behalf of his friends and countrymen whenever his interest could be of service. The misfortunes, which, in the progress of Macedonian conquest, had befallen his native city Stagira, gave him an opportunity of shewing the strength of his attachment to the place of his birth. Although he had not resided there, and appears scarcely to have visited it for the long period of thirty years, yet, through his representations at the Court of Pella, the town was entirely rebuilt, its walls and ornamental edifices were restored, and its wandering citizens collected and reinstated in their former possessions. He himself supplied them with a code of wise laws for the regulation of their government; nor were the inhabitants on their part ungrateful for the generosity of their sovereign, and the patriotism of their fellow townsman. To commemorate the event, they instituted annual festivals called Aristotelæa, and gave the name of Stagirites to the month in which they were celebrated. Authors have recorded other examples of his exertions, in having, amidst the devastations of war, extended the patronage and secured the protection of science. We learn from Plutarch, that Philip, in testimony of the satisfactory manner in which he fulfilled his engagements as preceptor to his son, assigned him a school and a study, called the Nymphæum, at the neighbouring town of Mieza, where, long after his death, the shady walks and stone benches were pointed out still bearing his name. The same biographer mentions that Alexander, in reverence for

the sentiments with which his master had inspired him, spared the house of Pindar in the sack of Thebes; and that, in his expedition against the Persians, the town of Eressus in Lesbos was exempted from the fate of other conquered cities, because it was the birth-place of Theophrastus and Phasias, two of Aristotle's disciples.

Alexander was in his sixteenth year when he was placed under the tuition of the Stagirite, the most interesting period of life for moulding and confirming the future character of the man. In training such a youth, he had a rich field to cultivate, although the precocity of his intellect had in some degree outstript the unripeness of his years, and thus made it difficult for an instructor, however skilful, to alter or eradicate impressions which had almost settled down into fixed principles. The ambition of Alexander had early taken root, and the peculiarities of his genius had already manifested themselves in certain public and very important transactions at his father's court. When his lofty notions of conquest and his premature love of aggrandisement are taken into account, it may well be supposed that these juvenile passions would sometimes prove too headstrong to be governed or restrained by the voice of reason, speaking even from the mouth of an admired philosopher. Although many shared in the love and esteem of the youthful prince, Aristotle is the only one of his friends whose superior genius he appears unceasingly to have viewed with undiminished ad-

miration, and whom he seems to have treated through life with uniform and unchanged respect.

The branches of knowledge to which his attention was first directed, were poetry, ethics, and politics. Science and philosophy were not the only studies in which Aristotle excelled; he was addicted to the muses, and while he favoured the world with criticisms on the works of others, he was himself the author of productions that ranked him a poet of the first eminence. Few of his verses, indeed, have reached modern times, but the few that remain prove him worthy of sounding the lyre of Pindar; and it is not the least singularity attending this extraordinary man, that with the nicest and most subtle powers of discrimination and analysis, he united a vigorous and rich vein of poetic fancy. In his writings he frequently cites the bards of Greece, especially Homer. This taste he imparted to his pupil, for whose use he prepared a correct edition of the Iliad, which obtained the name of the *casket copy*, from the circumstance of its being enclosed in a rich casket, found after the siege of Gaza among the spoils of Darius, in which that unfortunate monarch is said to have kept his perfumed ointments. This edition he constantly carried about with him in his wars, regarding it as "a portable treasure of military knowledge," and every night it was laid with his dagger under his pillow. It is not improbable that the poetical prelections of his master, and his admiration for the verses of Homer, might tend to inflame that na-

tural love of military glory which afterwards carried him over the finest regions of the East, and taught him to weep for want of more worlds to conquer.* But the bard of Troy was not his only companion in these foreign expeditions. Plutarch says, that as he could find no books in the upper provinces of Asia, he wrote to Harpalus, and obtained most of the tragedies of Euripides, Sophocles, and Æschylus, with the Dithyrambics of Telestus and Philoxenus. The same author alleges that Aristotle taught him the art of medicine, a study with which he was not only exceedingly delighted in theory, but which he practised with considerable success among his friends.

That ethics and politics formed a prominent and most important ingredient in the education of the juvenile prince, is obvious from the writings which the Stagirite devoted to the subject. He addressed to his pupil, long after this period, a Treatise on Government, instructing him how to reign, and exhorting him to adjust the measure of his authority to the particular characters, habits, and modes of thinking, of the various classes of his subjects, according to a maxim which he frequently inculcated, that different nations require different modes of administration. In his treatise on politics, he has carefully delineated the plan of education best adapted to persons of the

* Plutarch says, that as soon as Alexander landed in Asia, he visited Ilium, and offered libations to the Trojan heroes. He anointed the pillar on the tomb of Achilles with oil, and ran round it naked, after which he put a crown upon it, exclaiming how happy that hero was in having a Homer to record his praise.

highest rank in society; and this plan we may suppose he put in operation in performing the task assigned him by Philip; modified no doubt according to the character and circumstances of the extraordinary youth for whose instruction it was prepared. According to the principles laid down in that book, the two years immediately following puberty constitute that important era which is especially adapted for improving and strengthening the bodily frame, and for acquiring that corporeal vigour which is one main-spring of mental energy. During this interesting period, with the proper management of which the future happiness of the whole life is so connected, Aristotle observes, that the intellectual powers ought indeed to be kept in play, but not too strenuously exercised, since powerful exertions of the mind and body cannot be made at once, nor the habits of making them be simultaneously acquired. Agreeably to this principle, Alexander was encouraged to proceed with alacrity in his exercises until he attained the highest possible degree of perfection in them; after which the whole bent of his mind was diverted to the acquisition of science and philosophy.

The curiosity of the young Macedonian was too ardent, and his judgment too acute, to rest satisfied with the meagre and superficial doctrines which then comprised the sum of popular instruction. The discernment of his preceptor easily perceived that his mind was capable of being trained to whatever is most subtle in distinction, and exalted by whatever is most lofty in speculation; and that his faculties, by thus expanding

and invigorating amidst objects of the highest intellectual pursuits, might thereby learn the more readily and the more perfectly to comprehend ordinary matters. This recondite philosophy, which Aristotle first delivered to his royal pupil, and afterwards to his hearers in the Lycæum at Athens, received the epithet of *Acroatic*, to distinguish those parts of his lectures which were confined to a select audience, from such as were delivered to the public at large, and these were called *Exoteric*. This technical division of the writings of the Stagirite, has given rise to a variety of different opinions and disputes. Some have imagined that in the two kinds of prelections just noticed, he maintained contrary doctrines on the subjects of religion and morality. But the fact is quite the reverse; his practical tenets being uniformly the same in both. His Exoteric or popular Treatises, nearly resembled the philosophical dialogues of Plato or Cicero; while his Acroatic writings, contained in a concise energetic style peculiar to himself, those deep and broad principles on which all science is built; and, independently of which, the most perverse reasonings, and the most intricate combinations, are but matters of common mechanical practice.*

The sublimity of this abstract and recondite philosophy, accorded exactly with the loftiness of Alexander's mind. Amidst the tumult and bustle of distant war, he considered it a source of pride to have made an acquisition which was then denied to the vulgar;

* Dr Gillies's Analysis of Aristotle's Ethics and Politics.

and when these writings were given to the world, he remonstrated with his master for having given others an opportunity of becoming as learned as himself. A correspondence on this subject has been preserved by Plutarch, who records the following letter written soon after the battle of Guagamela or Arbela, and while the youthful hero was in full pursuit of Darius.

"ALEXANDER to ARISTOTLE—Health.—You have not done right in publishing your Acroatic discourses, for wherein shall we be distinguished above others, if the learning in which we have been instructed be made common to all? As for me, I would rather excel other men in knowledge than in power. —Farewell."

In his reply, Aristotle rested his apology on the abstruse nature of the subjects, and the impossibility of comprehending them without the aid of verbal illustration.

"ARISTOTLE to ALEXANDER—Health.—You wrote to me concerning my Acroatic works, that they ought not to have been communicated, but kept secret. Know then, that though published, they are not made public, since none can fully understand them, except those who have heard my lectures.—Farewell."

From this it would appear that the Stagirite considered these writings merely as text-books or outlines of his course; and we may infer that the true cause of secrecy was the nature of the speculative doctrines inculcated in them. That he had taught his pupil a purer theology than that of the age and

country in which he lived, may be assumed, from the fact, that, in the midst of his brilliant victories and unexampled conquests, he reminded him of the superiority of religious excellence to worldly greatness; concluding an epistle to him with this memorable admonition, "that those who entertain just notions of the Deity, are better entitled to be high-minded than those who subdue kingdoms." Persecution for avowing opinions differing from those of the national creed, was not then uncommon in Greece; and had the royal preceptor ventured to maintain the unity and perfection of God in plain and popular language, he must have exposed himself to the tragical fate that overtook Socrates.

It has been asserted by authors even so recent as Brucker, that for sordid and selfish purposes Aristotle accommodated the tenets of his philosophy to the base morals of courts; but his ethical writings which still remain, and which are the most practically useful of any that Pagan antiquity can boast, are an ample refutation of a calumny, which must be ranked as another "weak invention of the enemy." So sensible was Alexander of the benefits derived from his instructions, that he considered them more valuable than the advantages he inherited from his father, because, as he used to remark, the one gave him life, but the other had taught him to live well. "I have not reigned to-day," is said to have been his ordinary reflection, if a single day had passed without his doing some worthy or benevolent action. Upon the

whole, it may be safely asserted, that if this extraordinary prince, with all his faults, was distinguished beyond others for the love of knowledge and virtue, he was mainly indebted for this superiority to the lessons of his teacher. The seeds of his haughtiness and ambition were planted before Aristotle was invited to take the direction of his education. The passion for war,—the infirmity of noble minds,—could neither be restrained nor moderated; but to counteract that overruling propensity, his breast was inspired with still more pure and exalted sentiments, which placed him as far above the other conquerors of antiquity, as they were themselves distinguished beyond the common herd of mankind. If his loftiness could not be subdued, it was made to combat as much as possible upon the side of virtue; his excellencies, therefore, may fairly be ascribed to Aristotle,—his defects to nature, and the example of a court,—his misfortunes to himself, and the intoxicating effects of unbounded prosperity.

At the age of twenty, Alexander succeeded to a kingdom torn in pieces by dangerous factions and implacable animosities. In a short time events called him to a distant scene of action; and, after an affectionate intimacy of eight years, the pupil and the preceptor separated for ever, to pursue, in a career of almost equal duration, the most opposite paths to the same immortal renown:—the one by his victorious arms—the other by the gentle weapons of philosophy;—the one by gratifying the most

immoderate lust of power—the other by teaching to despise this and all similar gratifications. When the one set out on his eastern expedition, the triumphs of which terminated in the course of ten years by his premature death, the other quitted the capital of Macedon, and returned to his beloved Athens, where he spent the remainder of his life (about thirteen years), instructing his disciples, and cultivating, with unabated diligence, the various branches of learning. It has been said that he accompanied the conqueror in his Asiatic wars; that he travelled with him over all Persia as far as the land of the Brahmins (India), where he wrote a work on the laws and institutions of two hundred and fifty-five cities; but this journey is a pure fabrication, and we therefore dismiss it without further comment. One circumstance may here be mentioned, as it is the only one that seems to have occasioned any suspicion or dislike between them. On leaving Alexander, Aristotle, preferring a life of study and retirement, recommended, as a person worthy of accompanying him in his Persian expedition, his own disciple and nephew Callisthenes, (son of Hero,) a learned man, but of a morose unaccommodating temper, unguarded in his speech, and obstinately attached to the old system of republicanism which Philip had overturned in Greece. His kinsman was aware of his faults, and having observed the unseasonable freedom with which he spoke to the king, he admonished him in a verse of Homer, "that his

unbridled tongue might shorten his days." The prophecy was literally fulfilled. Callisthenes, forgetting the advice of Arrian, that the attendant of a prince ought never to be wanting in due deference to his will, rudely and outrageously opposed Alexander's resolution of exacting the same marks of homage and prostration from the Greeks which were paid to him by the Persians. It is also said he had joined a conspiracy against the life of his sovereign; having taken great offence that Hermolaus, a noble youth who had studied philosophy under him, should have been severely punished with stripes, for having dared at a hunting-match to throw the first dart at a wild boar in the royal presence. The conspirators, it is added, were all stoned to death; the plot being discovered by one of their own number.

The punishment and fate of Callisthenes, whether his treachery was real or imaginary, is related more variously than almost any historical event of such public notoriety; some asserting that he perished in a dungeon, after being mutilated of his ears, nose, and limbs; and others that he was carried about in an iron cage, a miserable spectacle, covered with filth and vermin, and at last devoured by a hungry lion. Whatever might have been the manner of his death, most writers concur in opinion, that he met with the just reward of his rashness and arrogance. This transaction is alleged to have much estranged the affections of Alexander from his favourite preceptor The assertion, however, is not accompanied with

any solid proof; and the absurd calumny that he not only regarded this pretended displeasure as an injury, but even proceeded the length of joining in a conspiracy to poison the king, is warranted by nothing in history, except a report preserved in Plutarch, of a vague and hasty expression in a letter of Alexander to Antipater, "I will punish the sophist (Callisthenes) and those who sent him." The friendly epistles addressed by him while in Asia to his former instructor, contradict the supposition of any irritation or enmity between them.

Leaving the "Macedonian madman" to pursue his conquests in the east, we must now return to the personal history of the Stagirite. On arriving at Athens, he found Xenocrates teaching in the school of Plato, his predecessor Speusippus having been dead four years. The character of Xenocrates was that of dull gravity and rigid austerity. He had been a fellow-student with Aristotle at the Academy, where the striking contrast of their genius did not escape the notice of Plato, who used to exclaim, "What a horse and an ass have I to yoke together; Xenocrates requires the spur, Aristotle the curb;" alluding to the obtuseness of the one and the acuteness of the other. The circumstance of such a man having been exalted to the supreme chair of philosophy, is said to have determined the Stagirite to open a school on his own account; remarking, "that it would be disgraceful for him to be silent while Xenocrates publicly taught." This

observation some have thought to savour too much of arrogance and self-conceit to have been made by Aristotle; but whether it was ever uttered or not, his success soon demonstrated that he had not rated his scholastic talents too high. The Academy being in the possession of his friend, he made choice of the Lycæum, a place which Pericles had prepared for the exercising of his soldiers, and which lay in the immediate suburbs of Athens, on the banks of the Ilissus. It was well shaded with trees, and adorned with a temple of the Lycian Apollo. Here he established a gymnasium, where he taught philosophy to such as had an inclination to hear his discourses. It was his custom to teach walking constantly every day along the shady avenue (or *Peripaton*) of the temple, until the hour of anointing, which the Greeks generally performed before meals; and from this habit his scholars and his philosophy derived the name of Peripatetic. His Acroatic lectures were given in the morning to those who were his regular pupils. A considerable part of them is still preserved in his works, which form an abstract or syllabus of treatises on the most important branches of speculative science. His Exoteric discourses were held after supper (always an early meal with the ancients), at which occasional visitors were admitted. They constituted the amusement of his evening walks; for he thought exercise peculiarly useful after eating, for animating and invigorating the natural heat and strength, which the too rapid succes-

sion of sleep and food seemed fitted to relax and impede.

By degrees the number of his auditors increased so much, that he was obliged to desist from walking, and deliver his prelections sitting. The celebrity of the teacher speedily conferred a renown on the Lycæum, which eclipsed that of its rival, and which has made the very name famous to all posterity. Among his friends and disciples at this time were numbered some of the most eminent men of letters and philosophy in Greece. Not to mention Antipater, the governor of Macedon, and successor of Alexander, to whom he gave instructions; his school could boast of Theophrastus, who wrote the History of Plants, and a vast number of other works — of Phanias, a celebrated logician — of Eudemus of Rhodes, known for his analytical and geometrical writings — of Eudemus of Cyprus, whom Aristotle honoured so highly as to call his "Dialogue of the Soul" after his name — of Dicæarchus, an orator and geometrician, whom Plutarch ranks among the best of philosophers — of Aristoxenus, whose ingratitude has already been mentioned, as the calumniator of his master — of Hipparchus of Stagira — Leon the sophist — Æschiron, a heroic poet of Mitylene — Hieronimus the Rhodian — Heraclides of Pontus, a noted philologist — all of whom, with many others, are acknowledged to have studied in the Lycæum, where the attendance was so numerous and distinguished, that Nicander of Alexandria wrote a book expressly

upon the subject. Had this work survived, the catalogue would have been more perfect, but unfortunately it is no longer extant.

Like other great men, Aristotle had enemies and detractors, as well as admirers. Of their calumnious charges, some were so absurd as to refute themselves. They have been perpetuated in the sarcasms of Lucian, and the lying whispers of Athenæus, which, in more recent times, have been too often mistaken, even by the learned, for true history. In Athens, the jealousy and envy which usually accompany superior talents, were inflamed by philosophical prejudices, and professional rivalry Sophists and sciolists, soothsayers and satirists, assailed the Stagirite, and vied with each other in heaping obloquy on a character, the ornament of his own age, and destined for many centuries to be the great instructor of mankind. So long as Alexander lived, whose name then filled the whole civilized world, his preceptor was unmolested, even amidst the turbulence of the Athenian democracy; and it was not till the year following the death of that prince, that the rancorous malignity which had been suppressed burst forth against Aristotle with resistless violence. That he regarded with equal contempt vain pretenders to real science, and real professors of sciences which he deemed vain and frivolous, is obvious from innumerable passages in his moral and political works. But it was on account of his theological opinions, which, as we have stated above, were too refined for the grossness of

paganism, that he was cited before the tribunals of his country;—a mere pretext, to give a plausible disguise to the conspiracy formed against his life.

Accordingly, he was accused of impiety before the Areopagus by the hierophant (or priest) Eurymedon, abetted by Demophilus, a man of more weight in the Republic; both of them being instigated to this cruel persecution by the declared enemies of the accused. The heads of the accusation were—that he had introduced certain philosophical tenets, contrary to the religion of the Athenians; that he had honoured the memory of his wife Pythias and his friend Hermias with hymns and statues—ceremonies which belonged solely to the majesty of the gods. As the inscription on the altar and the ode in praise of Hermias have both been preserved, nothing more is required to shew the utter groundlessness of the accusation; and from the frivolous nature of this charge, which was considered the chief article in the impeachment, we may warrantably conjecture, that the reproach of worshipping Pythias with honours due to the Eleusinian Ceres, was equally unfounded. A more reasonable and a more natural inference might have been, that the virtues of the wife had inspired the husband with more than a common degree of attachment; and that, after her death, he had expressed his affectionate regard with an amiable enthusiasm, which the malice of his enemies construed into an act of criminal idolatry. As for the alleged impiety of his philosophical tenets, his denial

of a Providence, and the consequent inutility of prayers and sacrifices, these imputations are not only not corroborated in any of his writings, but clearly and uniformly contradicted. He enumerates the priesthood as among the functions or offices essentially requisite to the existence of every community; and he has shown his veneration for religion in general, by treating with tenderness even that distorted image of it reflected in the puerile superstitions of his country. Truth, however, is always dreaded by the interested supporters of popular errors; and the Athenian priests had more to apprehend from his enlightened theology than to fear from his pretended impiety.

Aristotle was not unprepared for this persecution, and, had his cause been tried before an impartial tribunal, defeat and disgrace must have recoiled upon his accusers. He is said to have composed an oration in his own defence, and to have inveighed in a strong metaphor against the increasing degeneracy of his fellow-citizens, by citing a verse from the Odyssey,

> Pear withers after pear,
> And fig on fig rots here,

alluding to the swarms of informers (or sycophants) and false accusers, which sprung up daily in Athens, in as regular succession as the fruits in the rich gardens of Alcinous. This discourse, the boldness of which could only have inflamed the blind zeal of his

weak or wicked judges, was not delivered in Court. Perceiving that his fate was inevitable, the philosopher stole privately away from the city, thus escaping the idle mockery of a trial; and being unwilling, as he expresses it, that the Athenians should have a second opportunity of committing a capital crime against philosophy—alluding to the death of Sòcrates, who had fallen a victim to the intolerant superstition of his age.

On leaving Athens, Aristotle directed his steps to Chalcis in Eubœa, and in this retreat he spent the remainder of his days. Here he was waited upon by the whole company of his disciples and followers, who besought him to make choice of a successor, to whom they might look up as the director and finisher of their studies. The pre-eminent merits of Theophrastus and Eudemus, the latter from Rhodes and the former of Lesbos, were universally acknowledged; and in deciding their claims, the prudent sage, to avoid giving offence, had recourse to a gentle artifice. Having requested a draught of Rhodian wine, he admitted it was strong and pleasant; but when he had tasted the Lesbian, he pronounced it the sweeter of the two—thus leaving his auditors to infer, in the true style of eastern parable, on whom his choice had fallen. Theophrastus was not only remarkable for genius and erudition: he excelled as an orator, as the very name imports which is expressive of his *divine eloquence*. His writings were numerous, and Diogenes has preserved the

titles of above 200 treatises, only a few of which are extant. The fame of the Lycæum, which the Stagirite himself had maintained unimpaired through life, was amply sustained by his successor, whose increasing reputation soon attracted an audience of 2000 scholars. His friendship was courted by some of the most powerful kings and princes of his time, amongst whom were Cassander and Ptolemy, who had succeeded Alexander on the thrones of Macedon and Egypt.

Aristotle did not long survive his retirement to the shores of Eubœa. He died within twelve months after leaving Athens; persecution and exile having probably shortened his days, as he was only in his sixty-third year. The manner of his death, like various circumstances in his life, gave rise to many false and contradictory reports. St Justin says that he died of shame and vexation at not being able to explain the cause of the tides in the Euripus, an arm of the sea on which Chalcis stood, and which, as Lucian avers, ebbed and flowed seven times in twenty-four hours. Upon this assertion has been engrafted the puerile story, that he threw himself into the waves in despair, exclaiming, "Euripus shall take Aristotle, since Aristotle cannot comprehend Euripus." Suidas states that he poisoned himself by drinking hemlock — an assertion at variance with truth, and rendered altogether improbable, from the fact, that in his writings the Stagirite always speaks of suicide as a shameful and cowardly

crime. According to Laertius, Dionysius, and other creditable authors, his death was occasioned by the natural infirmity of his stomach, which was greatly increased by over-watching and excess of study. To this malady he had long been subject, and to assuage it he was in the habit of applying a bottle of warm oil to his breast. Considering his frequent indisposition, it is more remarkable, as one of his biographers observes, that he lived so long, than that he did not live longer. Some have recorded the dying words which he is said to have addressed to those standing around him, " Thou Cause of Causes have mercy on me;" but their genuineness may be doubted, as they rest on no authority more ancient than the testimony of a Christian writer. The Stagirites brought the body of their philosopher from Chalcis to his native place, where it was buried with vast solemnity, and where a magnificent tomb was built, and an altar erected to his memory.

Of Aristotle's appearance and habits little is known. In stature he was short, having slender limbs, a high nose, small eyes, a weak voice, and a stammering hesitation in his speech. It was perhaps to make amends for the niggardly bounty of nature, that he took more than ordinary pains in the dress and ornaments of his person. His constitution was delicate and sickly, but he counteracted its infirmities by temperance. His application to books was indefatigable. So incessant was he in the pursuit of knowledge, that he regularly devoted to it

those hours which he stole from the necessary season of repose; for Laertius affirms, that, when he went to bed, he held a brazen ball in his hand, the noise of which, dropping into a metal basin when he fell asleep, might awake him to resume his studies; and in this practice he was imitated by his royal pupil Alexander. He was twice married. By his first wife he had a daughter, called after her own name (Pythias), who survived her father, and gave birth to a second Aristotle, of whom nothing except this circumstance has been recorded. His second wife was Herpylis, a native of Stagira, and basely defamed by the enemies of her husband, as a courtezan and a concubine. By her he had an only son, Nicomachus, who was a disciple of Theophrastus, and fell in battle at an early age. To him he dedicated his great work on Morals, called "Nicomachea," which, as it was the last and principal object of his studies, is of all his performances the longest, the best connected, and incomparably the most interesting.

His will, a copy of which is preserved in Laertius, is curious, not merely as throwing some light on his domestic affairs, but as an example of the distinct yet concise form of ancient testamentary deeds. If indited shortly before he expired, it refutes the fables about his committing suicide, and may be reckoned an evidence that he not only died a natural death, but with a calmness and composure worthy of philosopher. Antipater, the confidential minister o Philip, and afterwards viceroy of Macedon, was ap

pointed the executor of this testament, with an authority paramount, as appears, to that of the other persons who were afterwards conjoined with him in the guardianship of his widow and children. To Herpylis, besides other property in money and slaves, was left the choice of two houses, the one in Chalcis, the other his paternal mansion at Stagira; with instructions that whichever of them she might prefer to inhabit, might be properly furnished for her reception. The testator commends her domestic virtues, and requests his friends, that, in testimony of her faithfulness towards him, they would distinguish her by the kindest attention; and that, should she again think of a husband, they would be careful to provide for her a suitable match. To his son Nicomachus, and his daughter Pythias, he bequeathed the remainder of his fortune, with the exception of his library and writings, which he left to his favourite scholar Theophrastus, one of the trustees. It was stipulated, that his daughter, when she attained a marriageable age (being then about fourteen years old), should be given to Nicanor, the son of Proxenus, whom he had adopted; and, failing him, that Theophrastus himself should accept her hand and fortune; on which happy occasion, four of his slaves were to obtain their manumission. The bones of his first wife he ordered to be disinterred, and laid beside his own, as she herself had requested. None of his slaves were to be sold; they were all to be either emancipated by his will, or ordered to be set

free by his heirs, so soon as they seemed worthy of liberty; an injunction conformable to the maxim inculcated in his Politics, that slaves of all descriptions ought to be liberated whenever they merited freedom, and were qualified for enjoying it. The testament concludes with instructions as to the performance of such marks of respect as he considered due to the memory of his relations, and to the religion of his country; viz. the erecting of the statues he had dedicated to Proxenus and his wife; to his own mother and brother, Arimnestus; and, finally, to Jupiter and Minerva, the *Preservers* (Σωτηρες), which he had vowed to them for the health of Nicanor. These latter were to be placed at Stagira, and to consist of "statues of beasts of stone of four cubits."

The private character of Aristotle seems to have been irreproachable. That he had many detractors, who envied him his popularity, and have transmitted very unfavourable accounts of his moral qualities, has already been mentioned. Some carried their extravagant censures so high, as to accuse him of every vice that can degrade human nature. He was stigmatized as a glutton, a libertine, and a parasite, adapting his philosophy to the corrupt practices of the great; as a sordid miser, who sold the oil which he had used medicinally, and even the empty brass pots in which it was contained; and as an ungrateful citizen, who betrayed the place of his birth to the Macedonians. These and numerous other charges were the pure offspring of calumny, and owe their

propagation to the zeal of philosophical rivalry. The circumstances of his life, and the esteem in which he was universally held by his contemporaries, afford evidence enough, that the dark side of the picture has been greatly overcharged. Of this we have still more decisive proof in the tone and spirit of his writings, especially the ethical part of them, which breathes a purer morality than is to be found in any antecedent author; a morality, also, avowedly practical, and by which he would have stood self-condemned, had his own conduct been at variance with it. "He exhibited a character as a man (says a modern biographer) worthy of his pre-eminence as a philosopher; inhabiting courts without meanness and without selfishness; living in schools without pride and without austerity; cultivating with ardent affection every domestic and every social virtue; while, with indefatigable industry, he reared that wonderful edifice of science, the plan of which we are still enabled to delineate from his imperfect and mutilated writings." The humanity of his nature appears in the different acts of kindness which he conferred on his relatives and benefactors; and his scrupulous regard for truth is preserved in his memorable saying—*amicus Socrates, amicus Plato, sed magis amica veritas*, "Socrates is dear, and Plato is dear, but truth dearer than all." He possessed considerable facetiousness of disposition; and in his political works are to be found many strokes of genuine humour, little suspected by his commentators.

As the wisdom of the ancients was often conveyed in apophthegms of pithy and oracular brevity, so his gravest maxims were frequently seasoned with innocent pleasantry. His smart sayings and quick repartees were long remembered and admired by those incapable of appreciating his weightier merits. Some of them have been preserved by Laertius, of which a few may be given as examples. Being reproved for bestowing alms on a profligate, he said, "he gave not to the man but to humanity." Being asked, what of all things grows soonest old? he replied, "Gratitude." Of friendship he said, "it was one soul in two bodies." Being told that one had reviled him, "let him beat me too (said he) when I am absent." To an idle babbler who had detained him, and expressed his fear that he had been tedious, he answered, "Not at all, for I paid no attention to your discourse." Hearing a conceited youth boasting of his fine cloak, "It was but a silly vanity (he said) to be proud of a sheep's fleece." A handsome young man much courted, thus accosted him, "If I were hated by the citizens as you are, I would hang myself." "And I (replied the other) would hang myself if I were admired by them as you are." It was as impossible, he said, for a tattler to keep a secret, as for a man to hold a burning coal in his mouth. Being asked what advantage he had derived from philosophy, he answered, "that of doing voluntarily what others do through fear of the laws." Such apophthegms, some of which are probably spu-

rious, would hardly deserve to be noticed, did they not serve to shew a mind free and unencumbered amidst the abstrusest studies, and a readiness of wit which never failed to check arrogance, and repel the sneers of the impertinent.

His unwearied application to study has been already noticed, and he took great pains that his disciples should follow his example. In the Lycæum their industry was remarkable. An archon, or regent, was chosen from amongst themselves every ten days, to superintend their progress and enforce the due observance of the stated rules of the school. Scientific lectures were given, and exercises prescribed to the students, both in the dialectical and rhetorical form. To assist them in the acquisition of every kind of learning, their master had taken care to collect a variety of books, which were constantly open to their perusal. Strabo, indeed, says that he was the first who formed a regular library; and that Ptolemy Philadelphus received directions from him as to the proper method of arranging the celebrated one which he founded. That he might have given suggestions as to the collecting and disposing of literary works, may be fairly admitted: but that no considerable libraries existed before his time, is neither probable nor consistent with history which mentions several, both princes and private persons, anterior to that age, who had made collections, and possessed repositories of books. His conduct towards the writers that preceded him, has

been censured with more acrimony than justice. Lord Bacon says, that, after the manner of the Ottoman princes, he thought his throne could not be secure unless he killed all his brethren. Ludovicus Vives charges him with detracting from all philosophers, that he might appropriate that glory to himself of which he had robbed them. It has also been averred that he rarely quotes an author but with a view to censure, and is not very fair in representing the opinions which he censures; and that, after collecting from the works of the ancients what he intended to confute, he committed them to the flames, that no evidence might remain of his misrepresentations. His passion for fame was undoubtedly great; and Bacon's opinion is not without probability, that his ambition was as boundless as that of his royal pupil—the one aspiring at universal monarchy over the bodies and fortunes of men; the other over their opinions. If such were the case, it cannot be said that the philosopher pursued his aim with less ability or less success than the hero. But the allegation that he burnt the works of his predecessors, is contradicted by the circumstance of his having established a reading depot in the Lycæum, and by the fact that most of the books said to have been thus destroyed, are mentioned by Cicero as extant in his time.

Whatever advantages Aristotle derived from access to an extensive perusal of the literary labours of others, he was too honest to plume himself with a borrowed reputation. There is a candour and man-

liness strikingly discernible in all his writings; not professedly set forth, but interwoven with the texture of his discussions, and rather betrayed unconsciously than demanding to be recognised. His knowledge acquired by reading can therefore only be reckoned an accidental help to the display of those amazing powers of reason and reflection which he naturally possessed, and which may be said to have qualified him to survey, with the discerning eye of intuition, every object of human understanding. There is scarcely a phenomenon which the natural world presents, or the human mind conceives to be the subject of scientific or speculative investigation, to which he did not extend his inquiries. In his Ethics he has given a full and satisfactory delineation of the moral nature of man, and of the discipline and exercise best adapted to its improvement. In his Politics he considers men in their social capacity, depending mainly for their happiness and perfection on the public institutions of their respective countries. To ascertain what are the different arrangements that have been found, under given circumstances, practically most conducive to these grand and ultimate purposes, is the important question which he undertakes to solve. The labour he bestowed on the inquiry may be conceived from the fact, that he had carefully examined two hundred systems of legislation, many of which are nowhere else described. In what may be termed speculative science he stood unrivalled, and it was in this de-

partment that the fertility and ingenuity of his intellect was most signally displayed.

Some authors accuse him of having studied to be obscure for the sake of being thought original, and of being less anxious to discover truth than to acquire fame. "His writings (says Dr Reid) carry too evident marks of that philosophical pride, vanity, and envy, which have often sullied the character of the learned. He determines boldly things above all human knowledge, and enters upon the most difficult questions, as his pupil entered upon a battle, with full assurance of success. He delivers his decisions oracularly, and without any fear of mistake. Rather than confess his ignorance, he hides it under hard words and ambiguous expressions, of which his interpreters may make what they please. There is even reason to suspect that he wrote often with affected obscurity, either that the air of mystery might procure greater veneration, or that his books might be understood only by the adepts who had been initiated in his philosophy." * That there may be some truth in the charge of vanity cannot be denied, and this "infirmity of noble minds" was to be expected in a man who had the daring ambition to be transmitted to all future ages as the Prince of Philosophers—as one who had carried every branch of human knowledge to its utmost limit. But it is manifestly unfair to impute to him all the obscurities, errors, and contradictions, that are now to be found

* Dr Reid's Analysis of Aristotle's Logic.

in his writings; considering that the greatest, and perhaps the best, part of them are lost, and that his copyists and interpreters have ascribed to him innumerable opinions which he did not hold; while by universally confounding his solid sense with the fancies of Plato, they have introduced incongruities and absurdities of which he was never guilty.

We do not say with some of his extravagant admirers, that he treated all his subjects in a manner complete, so as to surpass every preceding exertion of the human intellect. This eulogium is only partially true. But the praise and merit must be allowed him of having introduced and exemplified a stricter method of philosophising than what had been before observed in the Grecian schools. In every doctrine and theory he excluded the mixtures of poetry and fable which, in some degree, still prevailed; and he endeavoured to subject every hypothesis to the test of reason and argument. He framed with penetration and acuteness superior to all others, the rules of logical induction and demonstrative reasoning. It was from the accuracy and the novelty of his system in this respect, as well as from the universality of his genius, which appeared to master every subject of study with equal facility, that some of the ablest judges in antiquity, on perusing his elaborate treatises on the different branches of knowledge, hesitated not to pronounce him "the most excellent in all science, Plato only excepted." This is the opinion of Cicero, to whose philosophical works the world at large is

more indebted for a familiar notion of several of Aristotle's most important doctrines, than to the labours of all his commentators collectively.* The encomium, however, must not be understood to imply that the ancients approved exclusively of his physical and moral theories as preferable to all other systems; or that they gave an entire and unlimited assent to all his tenets. Even his own disciples and successors in the Lycæum disagreed with him on certain points; nor did the followers of other sects, who commented on parts of his works which they thought most ingenious, espouse his general principles, or acknowledge him their master in philosophy. Such servile adoration did not obtain until the dark age of literature arose, in which all taste for liberal inquiry became extinct, and the human faculties themselves appeared to be sunk in irretrievable torpor. It was then that the benighted world embraced him as an infallible guide, and bowed with submissive indolence to his dogmas. Revering him as an oracle, they believed that where his text was obscure, it was to be explained into some profound meaning which, being inexpressible by any known words, might be denoted by terms of their own invention, that had either a very dubious sense, or were as unintelligible as

* "Cum omnis ratio diligens disserendi duas habet partes, unam inveniendi, alteram judicandi, utriusque *Princeps*, ut mihi quidem videtur, Aristoteles fuit."—*Cicero in Topic.* And again, "Aristoteles longe omnibus (Platonem semper excipio) præstans et ingenio, et diligentia."—*Tusculan. Quæst.* lib. i.

the original. By these means was Aristotle at length not merely exalted to the throne of philosophy, but enshrined as it were the inspired and presiding genius of science. Never was papal despotism over the consciences of men more absolute, than was the authority of the Stagirite over their minds and opinions. The power of the greatest monarchs on earth must appear fleeting and precarious, when compared with his long and solitary reign in the schools of the middle ages.

From this summary of the life and character of Aristotle, we must now turn to give a condensed survey of his voluminous works. According to the most credible accounts, he composed about 400 different treatises on the various subjects which then formed the curriculum of scholastic study, including Logic, Rhetoric, Ethics, Politics, Physics, Metaphysics, Mathematics, Optics, Astronomy, Music, Mechanics, Medicine, Philology, Physiology, Natural History, Epistles, and many other topics, which it would be tedious to enumerate. It appears that neither he nor Theophrastus were at pains to secure the publication of their works during their lifetime; and the cause of their negligence or nonperformance of this important task, has been the theme of much conjecture. The solution of the question may depend on collateral circumstances with which we are altogether unacquainted: but the current persuasion was, that it arose either from an excess of modesty or prudence; or, from a diffidence of success in com-

peting with Plato, who then stood pre-eminent in philosophical fame, and whose opinions he had in several material points impugned. Whatever the fact may be, the carelessness or timidity of Aristotle was fatal to his writings, and had well nigh created a blank in literary history, which might have for ever deprived the world of this invaluable treasury of ancient learning.

The extraordinary fate and miraculous preservation of these works, form a curious episode in the biography of their author; and the regret which every friend to science must feel, that so much has perished, is heightened by reflecting on the imperfect and mutilated state of the little that remains. Whilst the Stagirite distributed his other property to his surviving family, he left the more precious bequest of his library and manuscripts to his favourite disciple Theophrastus, who in his turn bequeathed them to his own scholar Neleus, by whom they were conveyed from Athens to Scepsis, his native place, a city of the ancient Troas, in Asia Minor. The heirs of Neleus, to whom they next descended, being neither men of letters, nor lovers of books, (as Strabo relates,) totally neglected the intellectual treasure that had most unworthily devolved to them. The magnificence of kings had then begun to display itself in collecting works of genius, which were sought out with an eager and lavish curiosity. It was a taste happy for the cause of literature in general, although in the present in-

stance, the occasion of serious misfortune. The Scepsions on hearing that Eumenes, king of Pergamus, in whose dominions they lived, was making extensive researches with the view of forming a large library, resorted to a selfish expedient for securing their literary property from the rapacious hands of their sovereign. With the caution incident to the subjects of a despot, who often have recourse to concealment in order to avoid robbery, they hid the books under ground; and in this subterranean cemetery the writings of Aristotle, as well as the vast collection of materials from which they had been composed, lay buried for many generations, a prey to dampness and worms. Some authors, such as Bayle and Patricius, allege that Neleus sold the original works and the whole library to Ptolemy Philadelphus of Egypt, after having transcribed them; and that it was only the copies and not the originals that were exposed to the unworthy fate of rotting in a humid cell. But the supposition is altogether improbable. On the one hand it is hardly credible that so many thousand volumes could have been transcribed in so short a time; and on the other, it is reasonable to believe that the philosophy of the Lycæum would have struck deeper root and made greater progress in the Egyptian capital than it ever did, had the genuine works of the Stagirite adorned the library of Alexandria, under the first Ptolemies.

In their catacomb at Scepsis, the manuscripts remained until their very existence seems to have been

forgotten. At length, after the lapse of 130 years, and when all hope of their ever seeing the light must have vanished, vanity and avarice accomplished what a nobler motive ought to have done. Apellicon, a rich disciple of the Peripatetic school, whose name has been already mentioned, while residing at Athens, had turned his attention to the collecting of books; and although a "bibliosophist rather than a philosopher," (as Strabo calls him), he courted the ostentation of scholarship, by ordering them to be purchased at the dearest rate. The "witless felons of philosophy" at Scepsis heard of his premiums and opened their vault. The volumes of Aristotle and his illustrious successor were thus released from prison, or rather dug from the grave, and, with all the injuries of moths and mouldering upon them, sold for a large sum, and carried back to the city where they had been originally written. Their new owner was at the expense of employing a number of copyists to transcribe them, himself superintending the task. The work of restoring them was very imperfectly executed, and this must be attributed not only to the ignorance of the transcribers, but to the tattered condition of the manuscripts, and the abstruse nature of the subjects. The most considerable part of his Acroatic works, which are almost the whole of those now remaining, consist of little else than text-books, containing the detached heads of his discourses; and from a want of connexion in the matter, they have been exposed to additional cor-

ruption from the conjectural emendations of subsequent commentators.

What became of Aristotle's original manuscripts we are not informed; but the copy remained at Athens until the spoliation of that city by the Romans under Sylla. The library of Apellicon was a tempting object of plunder to the conquerors, who were then awakened to the value of literature; and accordingly, the whole of this philosophical treasure, with other rich booty, were transmitted to Rome. There the works of the Stagirite experienced a better fortune, owing to their having attracted the attention of Tyrannio, the famous grammarian, a native of Amysus in Pontus, who had been taken prisoner by Lucullus in the Mithridatic war, but was afterwards manumitted, in consideration of his learning and merits. By paying court to Sylla's librarian, he obtained leave, after much solicitation, to take copies of the manuscripts, which were communicated to Andronicus of Rhodes, who flourished as a philosopher at Rome in the time of Cicero and Pompey. Having undertaken the task of arranging and correcting those long-injured writings, the Rhodian performed the duty of a skilful editor, by giving them to the world in a more perfect shape than they had hitherto appeared. Though considerably amended and illustrated, the severe ordeal through which they passed had, in the lapse of nearly 300 years, greatly abridged their number. Out of the 400 books recorded by Laertius (and some have made

them double that amount), only forty-eight have been transmitted to the present age. But many of these last consist of several books; and, according to the estimate of the laborious Fabricius, the whole of these remains, taken together, form a golden stream of Greek erudition, exceeding four times the collective bulk of the Iliad and Odyssey *.

Though the works edited by Andronicus had suffered injuries which the utmost diligence and sagacity could not completely repair, yet, in consequence of those labours, the Peripatetic philosophy began to resume the lustre of which it had been deprived since the days of Theophrastus. In the Lycæum, the precepts of the sect were preserved through a line of successive teachers, by *viva voce* instructions; and it is not impossible that the disciples may have had portions of their great master's lectures written down; yet the details of the system were evidently entrusted to the tablets of memory. At Rome, the productions of the Stagirite made few converts at first; and even in Cicero's time, their perusal was confined to a few of the learned. This sect, therefore, in the Augustan age, made no considerable appearance in that capital; and, with the exception of Lucretius, we scarcely find among the Roman poets

* By this calculation, the whole of Aristotle's works must have contained a quantity of prose equal to sixteen times 28,088 verses—a fact the more extraordinary, since the greater part of his writings are merely outlines or text-books, giving the heads of his lectures, or the chief topics of discussion in the different branches of science.

REESE LIBRARY OF THE UNIVERSITY OF CALIFORNIA.

of that period any allusion to the doctrines of the Peripatetic school, or the philosophical renown of its founder. The edition of Andronicus made them better known, as his example of studying and illustrating them was soon followed by various other commentators.

To enumerate the host of Greek, Latin, Jewish, Arabic, and Christian writers who imitated the Rhodian editor in giving expositions and criticisms on the different works of Aristotle, would be foreign to our purpose. Their very names would fill a volume. From the era of Augustus to the invention of printing, the works of the Stagirite passed through the hands of more than 10,000 commentators; and after that period, several thousands more were added to the catalogue, amongst whom are to be classed not a few of the venerable fathers of the church, who borrowed from this armoury the intellectual weapons which rendered them invincible in their theological wars. The first generation of these expositors began in the age of the Antonines with the labours of Taurus the Berisæan, Adrastus, Alexander the Aphrodisæan at Rome, Galen the celebrated physician, Atticus the Platonist, and Ammonius Sacchus of Alexandria. Under the Roman emperors, they continued to flourish; and in the long list we find the once revered names of Aspasius, Syrianus, Olympiodorus, Plotinus, Porphyry, Themistius, Proclus, the second Ammonius, Damascius, Simplicius, Philoponus, and Johannes Damascenus. By the

Arabs or Saracens, Aristotle was superstitiously adored, and his philosophy was ardently studied in their schools during upwards of four centuries. His metaphysical niceties were well adapted to the acute mental temperament of that ingenious people. In dispute all parties acknowledged his supremacy, and appealed to his assistance. The doctors of the Mosque easily laid prostrate the most stubborn arguments both of Jews and Christians against the truth of the Koran with the resistless artillery of his syllogisms. To translate or produce a commentary on his works, appeared to them the highest pitch of excelience to which the genius of man could attain. The most eminent of these oriental expositors, whose fame long resounded even in the schools of Europe, were Alkendi, Alfarabi, Rhazes, Avicenna, and Averroes, who, in the felicitous obscurity of their opinions, often surpassed their master. When the literature of the Saracens was extinguished at the taking of Bagdad by the Tartars in 1258, the illustration of the Aristotelian philosophy was prosecuted with unabated vigour in the Western Empire. So early as the sixth century, his logic assumed a Latin dress in the translation of Boethius Severinus, the last illustrious Consul of Rome. In this field the venerable Bede has also signalized himself; and during the middle ages, a few learned monks exercised their ingenuity on the same subject. After a long interval of nearly 700 years, translations and commentaries in the same language

began to abound, through the industry of Albertus Magnus, Thomas Aquinas, Duns Scotus, John Major (a native of Haddington), Theodore Gaza, Franciscus, a Jesuit of Cordova, with a swarm of grammarians and scholastics whom the art of typography had multiplied so abundantly that, towards the close of the sixteenth century, Patricius reckoned their number at 12,000. This cold and unintelligible mass of Gothic and Saracenic dulness is now consigned to just oblivion.

It may seem extraordinary that a philosophy thus disfigured by a succession of interpreters often more worthy of ridicule than of admiration, should have so long maintained an absolute ascendency over the minds of men. But the fact is easily explained. During the intellectual slumber of the western world, the human faculties had neither the light of letters to detect false glosses, nor mental energy to emancipate reason and conscience from the thraldom of ignorance and superstition. The sway of the Stagirite, however, was not always untroubled. Launoy enumerates eight different revolutions of his authority in the University of Paris, the oldest and long the most distinguished school in Europe. In the year 1209, his writings were condemned as the pestilent sources of heresy, and committed to the flames. In 1542, the same writings were held in such veneration, that whoever denied their orthodoxy was persecuted as an infidel. Peter Ramus, a Parisian Professor of that age (1551–1572), signa-

lized himself as among the earliest to impugn the infallibility of this great oracle of philosophy. He wrote twenty books of *Animadversions* against Aristotle's Logic, eight against his Physics, and fourteen against his Metaphysics — a boldness which proved fatal, as it made him first an exile and at length a martyr. It is but fair to add, that in the glory or disgrace which the schools then attached to his opinions, the Stagirite had no concern. The true spirit and meaning of his philosophy was completely refined away by the fanciful glosses of copyists and critics; so that those scholastic combatants who banished or murdered each other in his name, fought merely about the husks of science, without the kernel.

These observations are particularly just as applied to the absurd jargon or logomachy which passed for learning, and during five centuries and a half divided Europe between the two renowned sects of Nominalists and Realists; so called because the former, whose reputed founder was Roscellinus, Canon of Compeigne, in the eleventh century, held the doctrine of universals in logic to depend solely on *names* or words, and treated as mere illusions of fancy the Platonic ideas of their opponents, who regarded as their founder the celebrated monk Abelard, immortalized by his amorous follies and misfortunes, and numbered among their champions Anselm, archbishop of Canterbury. Under the banners of one or other of these factions, the learning of Christendom arrayed itself during a succession of many ge-

erations. In their fierce and scandalous disputes, the pugilistic doctors proceeded from words to blows, which often terminated in mutilation or death. In the hottest of the fray, the name of Aristotle was continually invoked, and his doctrines appealed to on both sides, though both parties flagrantly violated his authority—the Realists embodying their wild fancies under the name of *substantial forms*—while the Nominalists subtilised all knowledge, even theology itself, into shadowy notions and unmeaning terms.

During the prevalence of these gross corruptions in the Schools, and even amid the gloom of Gothic and Saracenic darkness, a few stars brightened the literary horizon, and voices were raised in favour of genuine philosophy. The calumniated and persecuted Roger Bacon, soaring above the ignorance of his times, maintained that Aristotle, rightly understood, was the fountain of all knowledge; and he asserted, with equal candour and firmness, that those who had undertaken to translate him were totally unfit for the task. But the beams of this luminary were quenched in the barbarism of the age; and his superior erudition, instead of enlightening, dazzled the weaker eyes of his contemporaries, who referred his wonderful discoveries to magic and the infernal arts. His illustrious namesake, Lord Verulam, rivalled his fame, but did not possess his candour in regard to Aristotle, whom he studiously copies, and continually abuses, for errors that belong to his interpreters and commentators. It is not a little sin-

gular, that the Stagirite did precisely what he is blamed by Lord Bacon, Hobbes, Malebranche, and other French philosophers, for not doing. The author of the Leviathan frequently combats, under the name of the Peripatetic philosophy, abstract essences, substantial forms, and innumerable other doctrines, metaphysical as well as moral and political, with nearly the same arguments by which Aristotle, their supposed author, had long before victoriously refuted them. The evil of confounding the simplicity of this philosophy with Platonism, was ignorantly perpetuated from age to age, through a succession of critics and commentators, not excepting the latest of them all, Mr Harris and Lord Monboddo, who perpetually ascribe to Aristotle the doctrine of general ideas, which he repeatedly and formally denied. His logic was misrepresented by Locke and Lord Kames; and even Dr Reid speaks of him harshly, as having purposely obscured his analytical rules by unmeaning illustrations. But wherever his principles and tenets have been studied with a competent degree of honesty and information, they have never failed to produce a conviction of their soundness and perspicuity; and, at the same time, an admiration for the wonderful discoveries and attainments in a man deemed the wisest of antiquity, and to whom, even in modern times, it will be easier to name many superiors in particular branches of knowledge, than to find any one rival in universal science.

To give an analysis of the philosophical and scholastic writings of Aristotle, belongs not to a work on natural history. A general notion of their contents may be communicated to the reader in a brief outline. The system of knowledge which prevailed in the schools when the Stagirite began to teach, and in which he had himself been trained, was not such as was likely to satisfy his penetrating mind. It was, in fact, a vast undigested scheme of theoretical wisdom, jumbled together without order, and fluctuating in its form and character, according to the talents and circumstances of its leading professors. The Pythagoreans blended physical, mathematical, and moral truth in mystic combination, as exhibited in the mythology of Egypt. In the hands of Socrates, philosophy assumed a more ethical complexion; but the fanciful imagination of Plato invested it once more with a mixed character, by embodying in one compressed view the various preceding systems. Considering that definitions could not apply to every perceptible object, if (according to the doctrine of Heraclitus) all such objects were constantly changing; and that numbers (as taught by Pythagoras) could not sufficiently account for that immense variety of objects which the universe presented, he concluded that there must be some existences, independent of the perceptible universe, to serve as the objects of definitions. Hence his famous doctrine of *Ideas*, or archetypes, corresponding to the different classes of external objects; and to these

abstract images he assigned a real being, but capable of intellectual apprehension alone. In this manner he reared a motley system of physical philosophy, on a basis of metaphysics and logic conjointly.

Although educated in this school, Aristotle had thought too deeply and accurately not to perceive that the cardinal doctrine of Platonism (ideas), however specious, was rather a shadowy representation, than a solid structure. He saw that the various branches of philosophy were separated from their parent root, or grafted on unnatural stocks; and that, in order to rest the sciences on a sure foundation, a more exact analysis of the principles of human knowledge was required. Accordingly, his grand aim was to develope a truly intellectual system, instead of the ingenious phantom which the enthusiasm of Plato had raised. The idols which had been set up in the niches and shrines of the schools, he swept away with a daring hand. In overthrowing the doctrine of ideas, he was no less a reformer of the ancient philosophy, than were Bacon and Boerhaave of the modern. It was the object of the one, as well as of the others, to cleanse and reconstruct the temple of science; to recall men from unprofitable speculations to the realities of nature; and to lay down rules to guide them in the discovery of sound and infallible principles.

Philosophy was regarded by Aristotle, either as furnishing the mind with the means of contemplating external nature, or ministering to the improvement

and right direction of human life. The three grand divisions into which he distributed it were, 1st, Theoretic; 2d, Efficient; 3d, Practical; including under the first, Physics, Mathematics, and Theology or Metaphysics; under the second, Rhetoric, Poetics, and Logic or Dialectics, comprehending what are commonly termed the liberal arts; under the third, Politics and Ethics, or the moral sciences.

The *Ethics* of Aristotle, as we already observed, display a wonderful degree of moral knowledge, and practical experience of mankind. Though composed amidst the darkness of heathen superstition, they abound with pure and just sentiments; and instead of depressing man to the low standard of manners and opinions then existing, they tend to elevate him to that perfection which a higher authority has pronounced to be an indispensable element in the Christian character. They are directed, no doubt, solely to the improvement of man in this present life; but so sound are the principles of conduct laid down, that they may be readily extended to those nobler views of our nature and destiny opened up to us in the inspired volume. To us who live in the sunshine of revelation, it may be difficult fully to appreciate the reach of thought it required in those times to see the science of ethics in its proper light, as a refinement of human character in order to human happiness. Yet to this merit the Stagirite is fairly entitled; and no greater praise can be given to a writer of heathen morality than to say

(as may be truly said of his) that it contains nothing which a Christian may dispense with, and no precept of life at variance with the Christian virtues.

In this department, Aristotle has left three principal treatises, viz. 1st, The Nicomachean Ethics, in ten books, addressed to his son; 2d, The Magna Moralia, in two books; 3d, The Eudemian Ethics, in seven books, addressed to Eudemus; besides a short popular tract on the Virtues and Vices. The first of these exhibits the most formal and complete development of his theory, and is the work on which his fame as a moral philosopher chiefly rests. The other treatises are illustrations of the same subjects, entertaining similar views, and sometimes expressed in the same language.

In these writings, his primary aim is to investigate the law or philosophical principle, according to which human actions attain the good or happiness which is their object; and which, as being the *end* really designed in all actions, whatever may be their immediate and particular object, is the great final cause of all. The doctrine of virtue, happiness, pleasure, friendship, justice, temperance, self-love, the affections, the passions, the motives and effects of actions, are the important themes which he discusses. In these inquiries, he takes a safer guide than the fanciful speculations of the Greek schools concerning the *chief good*, which imagined that there was some quality of good, admitting of abstract disquisitions into its nature. Hence the superiority of his

Ethics as a practical system, coming home with gentle yet resistless conviction to the hearts and understandings of men. His morality is neither too rigid nor over-indulgent. In many respects, indeed, it is imperfect, as every thing must be that rests on no higher authority than the sanction of reason or nature; but it gives juster views, and lays down nobler principles of duty, than any other system of antiquity. From not having clear light as to the real immortality of man, he was compelled to determine the excellence of human virtue and happiness from a view of his present condition only; but, at the same time, whilst he recommends the active discharge of those duties and virtues which are within our reach, and which belong to us as men, he directs us to pursue that happiness which is beyond our attainment, and which he himself describes as an immortalizing of our nature—a living according to what is divine in man, and what renders him most god-like, and most dear to the Divinity. Considering his disadvantages, it must excite our wonder that a philosopher living, as Aristotle did, amidst the darkness and disorder resulting from the want of a purer religion, should have given such sound practical observations on human nature, and formed such accurate conceptions of the perfection of human virtue.

The work on *Politics*, comprising eight books, was a necessary sequel to that on Ethics, inasmuch as the precepts of the one, to have a moral effect on man, require to be enforced by the external sanction

of the other ; for it was the current notion of ancient philosophy, that the laws of the State, and the institution of rewards and punishments, were the great instruments for bringing mankind to that course of action in which their real interest consisted. On this imperfect principle, Aristotle, in common with other Greek philosophers, constructed his theory of politics, which embraces three very important subjects, viz. the origin of society and government, the distinctions of rank in a commonwealth, and a comparison of the best plans of political economy. In the prosecution of this task, besides examining and criticising the systems of others, as Plato, Hippodamus, Phaleas, Diocles ; and the polities of Sparta, Lacedæmon, Athens, Crete, Carthage, &c. he discusses all the great leading questions both in civil and economical science ;—the duties of citizens and magistrates ; the different orders of priests ; the best plans of education ; naval and military force ; causes of sedition ; unions and combinations ; monopolies ; commerce and manufactures ; slavery ; freedom ; nature of property ; accumulation of stock ; and many other topics, in which the extent of his knowledge is not more remarkable than the soundness of his views.

Of the various kinds of government, the monarchical, the aristocratical, the republican, and the democratic, he considers the most "perfect polity" to be a mixture of oligarchy and democracy, so blended, that both appear, yet neither preponderate; and in which no one of the component elements of society has an

undue influence, but an equal regard is shewn to the claims of freedom, wealth, and virtue. He admits, however, that the public welfare may be promoted under other forms—a monarchy or an aristocracy—as well as under a "polity;" but the latter he prefers, as tending to maintain a due equality of rights and relations among the members of the community. One excellence of his system is, that it admits only the general pursuit of the common weal, which, like the private happiness sketched in his Ethics, is not to be made a distinct object under any particular form, but must be the universal aim of the whole organization of the society, as individual happiness is the result of the general regulation of all the moral principles. It is true that he supposes a society to constitute itself in order to its own moral happiness, and herein is the defect of his scheme; but this selfish principle must be considered as a necessary substitute in his system for a divine providence, the operation of which not being admitted or understood, he was obliged to have recourse to the agency of nature.

Aristotle appears the only political theorist among the ancients who never lost sight of the moral nature of man in his speculations. While most others, not excepting Plato himself, treated human society merely as a physical mass, capable of being moulded into particular forms by the mechanism of external circumstances, he ascribes the formation of the best social constitution to the force of custom, philosophy,

and laws. His whole treatise well deserves to be studied, both for its political maxims and its historical information. It lays open the elements of stability and decay inherent in the different theories of government; and it points out the common principles on which the maintenance of civil order, under any form whatever, must essentially depend. "In this incomparable work (says Dr Gillies), the reader will perceive the genuine spirit of laws, deduced from the specific and unalterable distinctions of governments; and, with a small effort of attention, may discern not only those discoveries in science unjustly claimed by the vanity of modern writers (Montesquieu, Machiavel, Locke, Hume, Smith, &c.); but many of those improvements in practice, erroneously ascribed to the fortunate events of time and chance in these later and more enlightened times. The same invaluable treatise discloses the pure and perennial spring of all legitimate authority; for in Aristotle's Politics, and *his only*, government is placed on such a natural and solid foundation, as leaves neither its origin incomprehensible, nor its stability precarious; and his conclusions, had they been well weighed, must have surmounted or suppressed those erroneous and absurd doctrines, which long upheld despotism on the one hand, and those equally erroneous and still wilder suppositions of conventions and compacts which have more recently armed popular fury on the other."

The second grand division of Aristotle's philosophy, called the Efficient, includes *Dialectics* or *Logic*,

Rhetoric and *Poetics*, with their accessory and collateral sciences. Dialectic, or the art of reasoning, taken in its widest sense, is the method of deducing the probabilities on either side of a question, so framed as to involve one of two contradictory propositions in the answer, according as the affirmative or negative side is adopted. No part of scholastic science stood more in need of amendment than this; and accordingly his treatise on the subject is the reformation of the irregular and confused system in use before his time. Not only does he explain the general notion of the science, as the art of defending or impugning an opinion; he takes a wider and more philosophical view, by investigating the grounds both in the structure of language and the connexion of thought, on which all arguments must rest.

This art presented a field for the display of singular acuteness, and it was carried by Aristotle to a degree of perfection beyond what any before him had conceived. He pointed out the method by which the defender of a thesis might be invincible, and taught the opponent to shew no less insuperable skill in his attacks; so that every question could easily be perplexed with endless disputation, and all reasoning made to revolve in a circle. To excel in the management of the syllogism was the pride and glory of the schools in the dark ages; but the extravagant height to which it was carried, was an impediment to knowledge, and a burlesque on moral science. This, however, was an abuse of the system, and

ought not to be charged as any impeachment of the labours of the Stagirite. His four books of *Analytics* divided into *Prior* and *Posterior*, testify how distinct and comprehensive a view he took of this dry and apparently barren subject. The reader cannot fail to mark the exactness of his rules for the conversion of one proposition into another; and to admit the special claim he has to the invention of *Topics*, or general heads of every species of question or argument, together with the most pertinent and advantageous methods of treating them. By way of generalizing this science, he has arranged all the objects of human thought that can be expressed by single words, under ten *Categories* or *Predicaments*; and in explaining the nature and properties of each, he has opened up to the inquisitive mind a wide field of syllogistic information. The preceding treatises, including one book of *Interpretation*, one of *Sophisms*, and eight of *Topics*, form collectively what is now called Aristotle's *Organum*, or Logic; a work admirably calculated for sharpening the understanding and expanding the intellectual faculties; but a work which has been often as grossly misrepresented, as it was long most wofully misapplied during those ages when scholastic jargon had usurped the name and the seats of philosophy.

In his three books on *Rhetoric*, Aristotle has displayed the same extent and variety of learning as in his Ethics. He treats it not merely as the science of eloquence and composition, but as the art of per-

suasion; and although he lays down excellent rules for the structure of sentences, and the skilful use of ornaments in style, he cautions the orator to consider them as subordinate to the proper business of his profession. He dissuades him from imitating the practice, then too common, of appealing to the passions of the hearers, rather than to their judgment and understanding; but he recommends him to study every variety of human character, and to avail himself of the moral feelings, and even of the natural prejudices, of his auditory. His division of the art is threefold, according to the different occasions on which it was employed among the Greeks: 1. The deliberative; or its use in political debates. 2. The judicial; or its use in popular assemblies, as those of Athens, in which the people collectively exercised the judicial functions. 3. The demonstrative; or its use in panegyric and invective, where the orator had only to gratify his hearers by a display of eloquence. In these several heads of inquiry, he has given an admirable analysis of the motives by which mankind at large are commonly actuated in their conduct and opinions. All the windings and recesses of the human heart he has explored; all its caprices and affections; whatever tends to excite, to irritate, to amuse, or to gratify it, have been carefully examined; the reason of these phenomena is demonstrated, and the method of creating them is explained. Nothing, in short, has been left untouched, on which Rhetoric, in all its branches,

has any bearing. The whole treatise is a text-book of human feeling,—a storehouse of taste and intellectual gratification.

The *Poetics* of Aristotle is a mere fragment, one book only remaining out of three of which the treatise originally consisted; but, imperfect as it is, it has been uniformly regarded as the great authority of the laws of criticism in poetry. The portion extant is almost exclusively confined to the consideration of the drama. The remarks on Tragedy, Comedy, and the Epos, are singularly applicable to the principles of modern criticism; making allowance for the difference of manners and opinions, and the dissimilarity of taste which the advancement of society has created between the dramatic models of Athens, and those of the nineteenth century. The loss of this part of the work is the more to be regretted, as it most likely contained much valuable information concerning Greek writers, whose works, perhaps whose names, are now unknown.

The Theoretic branch of Aristotle's philosophy, comprehending *Physics*, *Mathematics*, and *Metaphysics*, is the most entertaining, but at the same time the most defective part of his works. The term Physics appears to have been understood in the Peripatetic School in a very extensive sense, comprising the science of beings corporeal and incorporeal, and also that of substance in general, with its attributes and properties, abstractly considered. What is now called Metaphysics, did not receive

that appellation from the Stagirite himself, who has not treated the three subdivisions of this branch as separate sciences, but often blends their different principles in the same discussion. The name is unknown in his original works, and arose from the circumstance of certain treatises on what he denominates the *First Philosophy* or *Theology*, being placed in the edition of Andronicus the Rhodian, *after* the Physics.* This arrangement was adopted by other commentators, and as the subjects were of an abstruse and speculative nature, the term was applied by the schoolmen to what in modern writers is designated by the Philosophy of Human Mind. In his Physical disquisitions, the genius of Aristotle plunged into an abyss, which it could not fathom ; and in attempting definitions of the terms, *act*, *power*, *property*, *accidence*, *substance*, *energy*, *potentiality*, &c. he shewed the futility of endeavouring to explain what is indefinable, merely by substituting words instead of ideas. In considering Being in union with matter, and investigating those universal principles under which he conceived all existing things to be arranged, he fell into the absurdity of confounding mental impressions with the facts which nature presented to his observation. Instead of look-

* Andronicus is said to have prefixed to the twelve or fourteen books, which had no title, the epithet τα μετα, τα φυσικα (*metaphysica*), *the things after the physics*, to signify that he found these books so placed in the original collection, or to intimate that he judged this to be their proper position.

ing to the phenomena of the material universe, he employed himself in deducing consequences from metaphysical and mathematical *data*;—arguing from the mere abstract notions of the mind, to the realities of the external world. The first portion of his physical philosophy, contained in the treatise entitled *Natural Auscultations*, is devoted to inquiries into the principles of the science, in order to ascertain those fundamental conceptions of its several objects, from which all conclusions concerning them are deduced. These principles he reduces to three: 1. Matter; 2. Form; 3. Privation; so well known and so much perverted in the jargon of the schools. The design of his inquiry being to obtain, by physical analysis, an ultimate point to which all the various notions involved in the speculation of nature might be inferred, he proceeds to explain these natural objects to be such as have in themselves a principle of motion and rest, as contrasted with works of art, the principle of which is in the artist. From examining this inherent principle, and shewing how it operates in producing the ordinary appearances observed in the world around us, he is led to account for the processes of generation and corruption, and the changes which occur in bodies by alteration, mixture, locomotion, increase and decrease, &c.

The great doctrine of the ancient physics, "that nothing could be produced out of nothing," according to his theory, required no distinct consideration. Inquiring into nature simply as a principle of motion,

or a self-working power, he was not called upon to show how those changes which took place in the material world might be satisfactorily accounted for. It was no part of his philosophy to demonstrate that any particular material, or combination of materials, was employed in these processes of nature for effecting her productions and transmutations. All he assumes is, that some material or other is used in every instance of a physical object, to effect that constitution of it in which its "form" consists. From considering this question, he proceeds to examine what principles reject and exclude one another in the various changes of the material world; these being the causes of the transition of one nature into another:—the presence of one involving the privation of all those forms of matter dependent on the other. What these mutually excluding principles are, he decides by a reference to the sense of touch; that being the proper evidence to us of the existence of body, as may be inferred from its resistance to that faculty. According to this theory, the contrarieties ascertained by touch, and which account for all the different forms of matter, are hot and cold, dry and moist; the first two as active principles, the last two as passive. These four principles admit only of four combinations; it being impossible that the contraries of heat and cold, or moist and dry, can co-exist. The effect of each combination is a different element; thus, fire is a coalition of hot and dry; air, of hot and moist; earth, of cold and dry; water, of cold

and moist. Any of these elements may pass into another by the privation of one of the combined principles; for instance, water into air by the privation of cold, and the consequent union of hot with the moist that remains. When the change is simply in the affections or *attributes* of some existing body, the process is that of alteration; but when the change involves an entire transmutation of the original material, the process is that of generation and corruption. Upon these complex principles did Aristotle account for all the phenomena, sensible and tangible, that take place in the material universe around us.

The heavenly luminaries, as constituting a branch of physics, demanded his attention from their necessary connexion with the full development of his theory of motion, and in order to trace up that principle through its successive impulses from this lower world to the First Cause or Prime Mover. His whole astronomy is dependent on those speculative notions which he had adopted of lightness and heaviness as intrinsic and absolute properties of bodies, by which the exact position of each of the material elements was regulated in the mundane system. Fire he placed in the extreme point upwards; earth lowest; and in the intermediate space, air and water. On some points, his notions were tolerably correct. He admits the spherical form of the earth, from the evidence of lunar eclipses, in which he had remarked that it always exhibited a curved outline and he inferred its magnitude to be not very great,

(about 37,000 miles) from the variation of horizon consequent on a slight change of our position on its surface.* But in most other respects, his views partook of the current errors of antiquity. The earth, he concluded, must be at rest, and therefore formed the centre of the universe. That the whole heavens were spherical, he supposed to be a necessary consequence of the perfection belonging to them :— a solid being the most perfect mathematical dimension, since angular bodies would necessarily imply vacuities in space.

The revolutions of the celestial bodies he conceived to be performed, not in consequence of a tendency to the centre, but of the absence of any such tendency ;—a principle directly opposite to that of modern astronomy. That they do not revolve in themselves, he considered to be evident from the fact, that the moon always presents the same side to the earth. Their motion, therefore, resulted from being carried round by revolving spheres ; the first in order being that in which the fixed stars are placed, next the five planets, then the sun, and lastly the moon nearest to the earth. This idea of the stars revolving in solemn silence, was contrary to the

* It is curious how nearly Aristotle approached, but on a different principle, to Columbus's notion of a western passage to India. In his book *De Cœlo*, he observes, " those who supposed the region about the columns of Hercules (Gibraltar) conjoined with that of India, and the sea to be thus one mass, seem to conceive what is not very incredible ; alleging as they did in evidence of their conclusions, that elephants were found at both extremities."

beautiful fancy of the Pythagoreans about the music of the spheres; for, according to Aristotle, they could emit no sound as they moved with their spheres "like the parts of a ship with the ship." To account for the apparent irregularities in their motions, he imagined that there were as many additional spheres employed in the revolutions of each body, as it appeared to have different motions.

The necessity of explaining what it was that imparted to the different spheres their principle of motion, led him to carry his speculations up to some ultimate cause, itself unmoved, in which they had their origin; hence the close connexion with the physical and the metaphysical philosophy of Aristotle; and hence too the reason why he gave the latter science the designation of theology. According to him, the several spheres of the heavens presented a distinct class of beings (*ουσιαι*) or substances, whose principle of motion he considered to be the vital energy itself in which they had their existence; but it does not appear that he attributed to them a proper divinity in themselves, although he speaks of them as possessed of a divine nature, for he refers their perpetuity of motion to the ultimate principle or First Mover—the Deity of his system. This great first principle he regarded merely in a metaphysical point of view; for it must be observed, that in his philosophy there is no notion of a Divinity inculcated as the Creator and Governor of the universe; it is merely as the soul—the intellect—the energy—the excellence and perfection of the system that he con-

templates the Divine Being; it is, in short, pure being abstracted from all matter, and therefore only negatively defined as without parts or magnitude, impassable, invariable, and eternal. But whilst his system included no Providence, it has the merit of excluding the operation of chance and accident. These, he observes, are not capable of being causes of any thing; they are merely descriptions of what takes place contrary to some presupposed design, or some tendency in nature.

His theory of the soul or living principle, is more rational than that of most ancient philosophers. In accordance with the system of his physics, he wisely avoids endeavouring to refer it to any particular class of material objects;—explaining its nature as an instance of the union of the two principles, matter and form, in a common result. His definition thus maintains the distinctness of body and soul as a combination of two substances; without, however, defining what the soul is in itself. From this view, it may be perceived to what extent he acknowledged the immortality of man. In so far as human nature is purely intellectual, he conceived it capable of existing separately from matter, and in some sense divine; but in so far as it consisted of passions and affections, he regarded it as mortal, and necessarily perishable with the body. As to the nature of that immortality which he thus attributes to the intellect, he makes no explanation; speaking of it as a rhetorician rather than with the precision of a philoso-

pher. His sentiments on this subject are fully stated in his book on the Soul; and in several smaller treatises on the Parts and Motives of Animals,—on Perception,—on the Duration of Life,—Youth and Old Age,—Life and Death,—Respiration,—Memory,—Sleep,—Waking and Dreaming; and to these may be added his book on Physiognomy, and his Treatise on Animals, which, though properly a work of Natural History, is also illustrative of the nature of the soul, considered as the living principle in all animated beings.

In *Mathematics*, little comparatively has been left of what Aristotle must have written. The only treatises under this head, are the Mechanical Questions, and a book on Indivisible Lines. But as he had been trained in the school of Plato, whose threshold was impassable to those who had not drunk deeply at the fountain of geometry, and attained a perfect skill in the methods of mathematical investigation then known, we may infer that his studies in this department were as minute and extensive as in others in which more of his writings have been preserved. Of this, indeed, we require no better proof, than may be gathered from passages in his physics, in which we find him often establishing conclusions by steps of mathematical demonstration. To this class may be referred his treatise called the Problems, containing queries chiefly on subjects belonging to Natural Philosophy, with brief answers; and a curious tract against the doctrines of Xeno-

phanes, and Zeno the Eleatic, which shews the vast research and sagacity of his observations. He has separately discussed the nature of colours, and of the objects of hearing. He has also explained the causes of meteors, comets or bearded stars (πωγωνιαι), earthquakes, exhalations, clouds, rain, snow, the galaxy, the rainbow, and other phenomena of the atmosphere, in a work on Meteorology. His books on plants and minerals have perished; but we learn from himself that he had given an account of all the different fossils and metals. He is also said to have written on Comparative Anatomy, but that work no longer remains.*

It is chiefly in his character as the historian and interpreter of Nature that Aristotle ought to be contemplated in a work like the present. His knowledge in this department was as varied and comprehensive as in political and speculative science; his object being to accumulate and digest all that was then known of the structure and productions of the earth; and if we may judge of what is lost by what has come down to us entire, it would be no easy matter to determine whether most admiration was

* The treatise on Plants, edited with his works, is acknowledged to be by Theophrastus, whose writings, from the circumstances connected with their preservation, might naturally be confounded with those of his master. The treatise De Mundo, as also the collections of wonderful Narratives, and perhaps the Fragment on the Winds, are reckoned spurious, and have been rejected from the number of his works, the internal evidence being against their imputed authorship.

due to his descriptions of the terraqueous globe, with its seas, rivers, mountains, and volcanoes; or to his minute diligence in investigating the several objects of the animal, vegetable, and mineral kingdoms.

Fortunate it is for Natural Science, that both his History of Animals, and his philosophy respecting that history, have reached us in a far more perfect state than any other portion of his physiological writings. On the subject of Zoology, his treatises were comprised in fifty books, of which twenty-five are happily preserved. It is quite immaterial to our purpose, to inquire whether this immense body of Natural knowledge is to be considered as containing the result of his own observations only, or whether it is a collection of all that had been observed by others. The latter is most probably the case; so vast an undertaking being evidently too much for any one man to accomplish. It may seem extraordinary, that, in an early age, without the inventions and improvements of modern philosophy, and on a branch of science which is naturally progressive, so vast a mass of information should have been collected and arranged by a solitary individual, however long his life, and however great his leisure. But Aristotle was the friend of a man as extraordinary as himself, who generously supplied him with the means of at once gratifying his taste for universal learning, and conferring an invaluable benefit on posterity. The conquests of Alexander, and his marches through so many distant and different coun-

tries, presented singular opportunities for gathering materials on Zoological history; and accordingly, Pliny informs us that some thousands of persons were employed for this purpose, both in Greece and the East, and at an expense of £200,000. The same author labours to describe with what ardour and zeal that illustrious hero, during the course of his expedition, collected and sent to his preceptor whatever rarities were to be found in parks, or ponds, or aviaries, or hives, or were to be procured by hunting, fishing, and fowling, throughout the wide extent of Asia *. Such were the resources which the Stagirite had at his command for writing the History of Animals, besides the assistance of a voluminous library, in which, no doubt, was treasured up the knowledge of preceding naturalists. By combining with the descriptions in his books the observations of those living wonders transported from the

* The following is the original passage in Pliny in reference to this subject: "Alexandro magno rege inflammato cupidine animalium naturas noscendi, delegataque commentatione Aristoteli, summo in omni scientia viro, aliquot millia hominum in totius Asiæ Græciæque tractu parere jussit, omnium quos venatus, aucupia, piscatusque alebant, quibusque vivaria, armenta, alvearia, piscinæ, aviaria, in cura erant; ne quid usque in gentium ignoraretur ab eo, quos percontando quinquaginta ferme voluminibus illa præclara de animalibus condidit."—*Nat. Hist.* lib. viii. c. 17. The sum of 800 talents, which, according to Athenæus, was granted by Alexander to his preceptor for the improvement of science, may be estimated at one-fifth part of the annual expense of the army by which that prince conquered Asia.

East, the recluse philosopher of Athens, while his pupil was conquering the world, composed, in the tranquil shades of the Lycæum, that immortal work which Pliny professed to abridge, and which Buffon despaired to rival.

The History of Animals occupies nine books: the remaining sixteen are employed in explaining their general affections or properties, and their principal parts or members; viz. four treat of their several parts, five of generation, and the rest of their sensations and motions, in the knowledge of which particulars he considered the philosophy of zoology chiefly to consist. As he extends that term to whatever has animal life, the first four books of his history, beginning with the outward conformation of animals, divides and distinguishes, (in comparison with the human form as that which is most familiarly known), the inhabitants of the earth, the water, and the air, from the enormous whale, and massy elephant, to the scarcely perceptible productions of dust and rottenness;—enumerating, with surprising accuracy, the agreements, and differences, and analogies, that prevail in point of external organization among all the living tribes of nature. In the three subsequent books, he examines the different classes of animals, with respect to the commencement, duration, and term of their generative powers. His eighth book examines their habitation and nourishment; and the conclusion of the history details their manners and habits, enumerates their friends and

enemies, and explains the ordinary means by which each class provides for its preservation and defence.

In taking this wide survey of animated nature, Aristotle pretends not to exhaust its infinitely varied branches, for these defy the grasp of science; but in the multitude of important and well ascertained facts which he relates, and which is incomparably greater than will be found in any work of equal compass, it is his main purpose to illustrate the general heads above mentioned, and to expound the properties or affections common to the greatest or most distinguished portion of the whole animal kingdom. To these general heads or common properties, he constantly has respect in the historical part of the work; so that his minutest observations respecting the humblest and least perfectly organized animal are often found to elucidate or confirm some important law of the animal economy *. His system, inasmuch as the range of his observation was limited, was necessarily defective. The world created by the microscope had not any existence for the philosophers of antiquity. By means of this and other inventions, the chain of being has been extended far beyond what the unassisted eye could possibly have reached. Our wider acquaintance with the different regions of the globe, has increased our knowledge of the animal kingdom; and our superiority in experimental science has thrown new light on the structure and functions of the animal economy. The ap-

* Gillies's New Analysis of Aristotle's Works, vol. i. p. 146.

plication of glasses has multiplied and magnified to our sight the almost endless succession and ever-diminishing tribes of insects, and enabled us to examine more accurately their germs and organs. Yet nevertheless, with all these advantages, it is surprising how nearly the facts collected by Aristotle correspond with the advanced state of knowledge at the present time; and in certain departments, Birds and Fishes, for example, it will not be easy to prove that modern writers have added much of importance to his observations. An eminent naturalist of the last century (Cavolini), in speaking concerning the development of the impregnated eggs of shell-fish, and the little attention which the subject had received, pays the following well-merited compliment to the minute information of the Stagirite: "When I consider this defect, and turn to Aristotle's History of Animals, I am seized with astonishment on finding that he should have fully and distinctly seen the facts which we have been able only very imperfectly to perceive; that he should have described them with the utmost precision, and compared them with the well-known observations concerning the eggs of birds. My astonishment is the greater, when I reflect that he was unassisted by microscopes, which instruments have in our days been brought to great perfection."

In chemistry, botany, and mineralogy, we scarcely find any thing approaching to a system among the ancients; but in the animal kingdom, the true

principles of classification seem to have been almost as clearly understood in the age of Aristotle as it is in that of Buffon and Cuvier. It was not reasonable, indeed, to expect that, antecedently to the knowledge of the circulation of the blood, of respiration, and also of the physiology of the absorbent and nervous system, a natural classification could have been accomplished on principles so satisfactory as has been done by modern philosophy; yet on comparing the zoology of the Stagirite with that of our times, we discover that, even in the infancy of science. there is frequently sufficient light, in the uniformity of Nature's laws, to guide the mind in deducing general conclusions from a systematic examination of facts. The progress of knowledge has shewn the existence of such a general coincidence and harmony of relation between the several component parts of an individual animal, that even a partial acquaintance with the details of its structure will enable the inquirer to ascertain its true place in the scale of organization; and hence, although Aristotle knew nothing of the circulation of the blood, or of the general physiology of the nervous system, and even comparatively little of the osteology of animals, yet subsequent discoveries have scarcely disturbed the order of his arrangement. He placed the whale, for instance, in the same natural division with common quadrupeds, because he saw that, like them, it is viviparous, and suckles its young, and respires by lungs and not by gills; and to this class it still belongs — the

circulation of the blood, as well as the arrangement of its nervous system, being essentially the same as in viviparous quadrupeds.

With reference to animal life generally, he notices the gradual advances made by Nature from the state of inanimate matter to that of living beings, whence arose the difficulty he felt in ascertaining the common boundary of the two divisions. In the scale of material existence, he observes that plants immediately succeed to lifeless forms of matter; holding, as it were, a middle rank between animals and all other organic bodies. His notion that inanimate substances graduate into life, as reptiles are alleged to have sprung from the mud of the Nile, is erroneous; but the difficulty which he felt in defining the exact limit between animal and vegetable organization, still exists, and is admitted by physiologists, after the lapse of more than 2000 years. The only formal terms of classification employed by Aristotle are *species* (εἶδος), and *genus* (γένος); of the first of which he gives a remarkably precise definition — as an assemblage of individuals, in which not only the whole form of any one resembles the whole form of any other, but each part in any one resembles the corresponding part in any other. His application of the term genus is more vague, and sometimes extends to what we now denominate by *tribe*, *family*, *order*, or even *class*. He was quite aware of the necessary connexion between the blood and the life of an animal: and he uses the colour of that fluid

for the purpose of distinctive description — calling those animals which have red blood ἔναιμα, and those which have it not red ἄναιμα; and thus he establishes a fundamental natural division, answering to the red-blooded and white-blooded animals of modern zoology. Another distribution of the several classes is into those which have blood, and those which have not; — among the former are man, viviparous and oviparous quadrupeds, birds, fishes, cetaceous animals, and serpents; while the latter comprise those naturally divisible into segments, as insects, those of a soft substance throughout, as cuttle-fish, &c. those having a comparatively soft shell, as lobsters, &c. and those which have a hard shell, as oysters, &c.

In examining the component members of animals in general, it has been already observed, that Aristotle selected man as a standard of comparison, alleging as a reason, that we are more familiar with the human form than with any other: hence it follows, as a necessary consequence, that viviparous animals, birds, reptiles, and fishes, would respectively come next in succession; and this order he actually observes in making his classification. Some have found fault with this arrangement, on the ground of its commencing with animals of a more complicated instead of those of a more simple structure, but there seems no good cause for the objection; and it is no mean encomium on the Stagirite to observe. that the same principle of arrangement

has been adopted by almost if not all modern naturalists, if we except Lamarck. Cuvier, Aristotle's great rival in this department, has not only followed it, but seems literally to have copied his descriptions in some natural groups and individual species of animals, particularly the class of Mammalia. Professor Kidd of Oxford, in his Bridgewater Treatise on the "Physical Condition of Man," to which we are indebted for some of the preceding remarks, has exhibited in parallel columns a comparison between the Grecian and the French philosopher in their physiological account of certain species; and he concludes that, with respect to those points in the history of animals equally accessible to both writers, the descriptions of the former are hardly inferior in accuracy to those of the latter. The examples adduced are those of man, ruminating animals, cetaceous animals, the elephant, the lion, the ape, the mole, the hedgehog, and the porcupine. "Nor does this observation" (continues the learned Professor) "hold with reference to the more common animals only: it is equally remarkable with reference to those which are of comparative rarity; in support of which assertion, I would refer, among other instances, to the description of the Sepia, and of the Chameleon, and of the evolution of the egg of the bird during incubation."

It is remarkable, that, from the age of Aristotle to nearly that of Linnæus, no systematic classification of animals was attempted—none at least was ge-

nerally adopted. Soon after the commencement of the last century, the Swedish naturalist directed his attention to the subject, and distributed the whole animal kingdom into six classes — Mammalia, Birds, Reptiles, Fishes, Insects, and Worms ; in which distribution, Lamarck observes, that he improved on Aristotle, first by using the more distinctive term *Mammalia*, and placing the *Cetacea* in that class ; and next by making a distinct class of Reptiles, and arranging them betwixt Birds and Fishes. If this alteration, which has been subsequently adopted by all other zoologists, be made, Aristotle's arrangement of vertebrated animals agrees with that of the present day ; and in distributing all other animals into *four* classes, which Linnæus distributes into *two* only, the Stagirite must be considered as having proceeded on the more philosophical principle, because the species of those animals, taken collectively, are much more numerous and much more diversified in their form and structure than the species of vertebrated animals *.

In *Entomology*, the claims of Aristotle as a great and original genius have been admitted by some of the most competent judges of modern times. Of the class *Insecta*, it has been affirmed, that Linnæus himself had not those precise ideas of its limits which the philosopher of Athens had adopted so many centuries before. The following Tabular View

* Kidd's Treatise on the Adaptation of External Nature to the Physical Condition of Man, p. 319.

of what may be called his system, has been drawn up from his works, especially the History of Animals:

- *Insecta.*
  - Pterota vel Ptilota
    - Coleoptera.
    - Pedetica = *Orthoptera saltatoria*, I tr.
    - Astomata = *Hemiptera*, Latr.
    - Psychæ = *Lepidoptera.*
    - Tetraptera
      - majora = *Neuroptera*, L.
      - *Orthoptera cursoria*, Lat.
      - Opisthocentra = *Hymenoptera.*
    - Diptera
      - minora = *Musca*, *Tipula*, &c.
      - Emprosthocentra = *Culex*, *Stomoxys*, *Tabanus*, &c.
  - Pterota simul et Aptera
    - Myrmex = *Formica*, L.
    - Pygolampis = *Lampyris*, L.
  - Aptera

"It may be further stated, that Aristotle perceived also the distinction between the *Mandibulata* and *Haustellata* of modern authors: for he observes, that some insects having teeth are omnivorous; while others, that have only a tongue, are supported by liquid food. He appears to have regarded the *Hymenoptera*, or some of them, as forming a *third* subclass; since he clearly alludes to them, when he says that many have teeth, not for feeding, but to help them in fulfilling their instincts.

"From the above statement it will appear, that this great philosopher had no contemptible notion — though he has only distinguished three of them as larger groups, by appropriate names — of the majority of the order of insects at present admitted. His *Coleoptera*, *Psychæ*, and *Diptera*, are evidently

such. His idea of *Hemiptera* seems taken solely from the *Cicada* or *Tettix;* but the manner in which he expresses himself concerning it, as having no mouth, but furnished instead with a linguiform organ resembling the proboscis of *Diptera*, proves that he regarded it as the type of a distinct group. Since he considers the saltatorious *Orthoptera* as forming such a group, it is probable that he included the cursorious ones with the *Neuroptera* in his *majora* section of *Tetraptera;* and the resemblance of many of the *Mantidæ* to the *Neuroptera* is so great, that this mistake would not be wonderful. His division of the *Diptera* is quite artificial.

" How far Aristotle's ideas with regard to genera and species attained to any degree of precision, is not easily ascertained: in other respects, his knowledge of insects was more evident. As to their *anatomy*, he observes that their body is usually divided into *three* primary segments—*head*, *trunk*, and *abdomen;* that they have an *intestinal canal*—in some straight and simple, in others contorted—extending from the mouth to the anus; that the *Orthoptera* have a *ventricle* or gizzard. He had noticed the *drums* of *Cicada*, and that the *males* only are vocal. Other instances of the accurate observation of this great man might be adduced, but enough has been said to justify the above encomiums. His principal error was that of equivocal generation *."

* Introduction to Entomology by Kirby and Spence, vol. iv. p. 433–434

In taking a retrospective view of the life and writings of this extraordinary man, the reader cannot but be struck with the amazing extent and variety of his attainments. It is a brief but bold and not inappropriate character of him given by an anonymous writer in Suidas, that he was "Nature's secretary, and had dipt his pen in intellect." Had he lived in the eighteenth century, the scientific world might have been indebted to him for the perfection of those systems which we owe to the labours of Linnæus, Cuvier, and Buffon. Had he known the discoveries of Galileo and Kepler, he might perhaps have been a Newton. But it was by the eye of reason and analogy only that he had to study the heavens and the earth, of whose beauty and grandeur he speaks with as much rapture as the most enlightened philosopher could feel. By the light of Nature alone, we see him sometimes penetrating deeply into Nature's mysteries—analyzing, defining, and demonstrating—sometimes encountering difficulties which the human mind itself is unable to surmount—often foiled in his exertions, yet always renewing the combat with renovated hope. In the lapse of centuries, while his *theories* have been alternately attacked and defended, exploded and revived, the *facts* which he collected with unexampled diligence, and which he has so systematically digested in his works, will for ever support his fame as the "Prince of Philosophers," and instruct the most distant ages of posterity.

ORNITHOLOGY.

NATURAL HISTORY

OF

GALLINACEOUS BIRDS.

This order contains a part of the feathered creation, which is by far the most useful in the domestic economy of man. The Jungle-cock, better known in its reclaimed state as the Barn-door Fowl, the Turkey, Peacock, and Guinea-fowl, the extensive race of Pigeons, and the various birds known as Game, all fall under it, and administer to his taste and wants; and whether as wholesome and grateful articles of food, adornments to his abode, his dress, or draperies, or a solace to his body when weary, they are universally esteemed, and by almost all nations are reared and domesticated for their various uses. We propose, therefore, to devote more space to the history of these birds than might perhaps be the real proportion in the extent we had marked out in this work, and the present volume will be confined to a single family of this important group.

The Gallinaceous Birds, named in the scientific language of modern ornithology *Rasores*, are placed third in Class Aves or Birds, and in addition to the Gallinæ, to which by former authors they were limited, they are now made to contain the Pigeons, and the Struthious birds, such as the Ostrich, Bustards, &c. The class has also been termed the first of the aberrant series, from the members of it possessing in a less degree the powers of flight and of perching and grasping—the great attributes of birds. These are developed to their greatest extent in the birds of prey and the incessorial order; and although in the present division we find some species with a strong flight, and feet fitted for grasping, yet, when they are examined as a whole, these are not seen as marked properties of the order, while others are most conspicuous.

The Rasorial birds are formed principally for abode upon the ground, and for this purpose the legs and feet are strong, the toes placed upon a plane, and connected at the base by a strong binding membrane. The hallux or hind toe, the great accessory in perching and grasping, is often wanting, and is always short, and the nails are short, or, when lengthened, always stretch in a line with the toe; consequently the powers of walking and running are great, and in some instances conduce alone to the preservation of their possessor. The greater part of their food is taken upon the ground, and consists of insects, grain, roots, seeds, and tender vegetables. Their nests are

generally made upon the ground, and the young run immediately when hatched. On the contrary, the organs fitted for flight are less powerfully developed, the wings are short and rounded, the body remarkably heavy, and of course requiring great strength to raise it, and the tail and its accessories are often so unwieldy, as to prove a complete incumbrance in any flight extending beyond a few yards. The internal structure is complicated, and appears to bear a strong analogy with the Ruminantia.

By modern ornithologists this order has been divided into five great families—*Pavonidæ*, *Cracidæ*, *Columbidæ*, *Tetraonidæ*, and *Struthionidæ*. The characters which we have given above are of course taken from the typical families of the order. The pigeons, with which we leave the incessorial birds, in many of their groups, possess extensive powers of flight and grasping, perform migrations on the wing, and live much upon trees. Their food, however, is almost entirely taken upon the ground, and we are beautifully led to the principal family of the true gallinaceous birds, by means of the Great Crowned, Nicobar, and Carunculated Pigeons. The Tetraonidæ or Grouse also in many of their members exhibit pointed and lengthened wings, and a flight of great strength. They however chiefly live upon the ground, feed and breed upon it. The Cracidæ, again, where the form and habits approach much nearer the type, where the toes are nearly upon a plane, and that behind is very short, breed on trees, while the

Struthious family shew the very extreme form in the wings and feet, running with prodigious swiftness, and using their short wings only as an assisting power in carrying them forward. None of them perch, and they all feed and breed upon the ground.

We devote the present little volume to the illustration of the first or typical group, the *Pavonidæ*, and shall describe in detail the various members of it, before noticing its peculiar characters, and the arrangement of the genera.* The first we have to notice is

* The arrangement in the descriptive part of the volume is not quite regular; most of the plates were long ago numbered and printed, and it was found impossible to change them. This will be corrected, however, in the synopsis, and in the short summary which we propose to give in the conclusion.

of Ohio, Kentucky, Indiana, and Illinois, and the vast expanse of territory on the Missisippi and Missouri, as far as the forests extend, are most abundantly supplied with this valuable game, which forms an important part of the subsistence of the hunter and traveller in the wilderness. It is not probable that its range extends to or beyond the Rocky Mountains. The Mandan Indians, who a few years ago visited the city of Washington, considered the Turkey as one of the greatest curiosities they had seen, and prepared a skin of one to carry home for exhibition *.

There can be little doubt that we are indebted to the Spaniards for the introduction of the Turkey to Europe, and that it would be brought from Mexico upon the discovery of the New World. From Spain a bird of such value, and so easily domesticated, would easily find its way to Britain; and although we cannot trace its introduction, we may confidently assert that it was not before 1525, and most probably between that and the year 1530. They do not appear in the bill of fare in the celebrated feast of Archbishop Neville; and the first published notice of the bird is in a "History of the Indies," by Oviedo, written in 1525. It appears from that traveller, that it was then an inhabitant of the greater islands, as well as of the mainland, and he speaks of them as peacocks; for, being a new bird to him, he

* Bonaparte Continuation of Wilson.

adopts that name, from the resemblance he thought they bore to the former; but he adds, "The neck is bare of feathers, but is covered with a skin which they change after their phantasie into diverse colours. They have a horn, as it were, on their front, and hairs on the breast." Their increase after their introduction must have been extremely rapid, or their worth must not have been duly appreciated; for in 1555 we find them rated at only four shillings each; and in 1573, they are recorded as the usual Christmas fare of a farmer's table, and ill "neighbours to peason and to hops." In France, they seem to have been first noticed a few years later, for the first Turkey that appeared at table was said to have been served up at the wedding banquet of Charles IX. in 1570; but four years previous to this, twelve Turkeys were thought worthy of being presented to that king. These are parts of the history of this bird which are perhaps only curious to the antiquary or historian, and of little practical use. The Turkey has now been domesticated in almost every civilized part of the known world; and it is probable that it will be sooner extirpated from the greater part of its native wilds than from the poultry-yards of the opulent and luxurious. Bonaparte observes, that it is now extremely rare, if, indeed, it exists at all, in the northern and eastern parts of the United States. In New England, it even appears to have been already destroyed one hundred and fifty years back. Again, he adds, "In Canada, and

the more densely peopled parts of the United States, Wild Turkeys were formerly very abundant; but, like the Indian and the buffalo, they have been compelled to yield to the destructive ingenuity of the white settlers, often wantonly exercised, and take refuge in the remotest parts of the interior. Although they relinquish their native soil with slow and reluctant steps, yet such is the rapidity with which the settlements are extended and condensed over the surface of this country, that we may anticipate a day, at no distant period, when the hunter will seek the Wild Turkey in vain." The imperfect records of its introduction to Europe may then be interesting to future generations.

A person who has seen the Turkey only in the poultry-yards of this country, can have no idea of the splendour of a fine cock in his full plumage, previous to the breeding-season. His plumage gleams with the brightest golden-bronze, tinged, according to the position, with blue, violet, and green, and beautifully broken by the deep black bands which terminate each feather, and which also have a metallic lustre. The length of the male figured by Mr Audubon* was four feet and an inch; the expanse of the wings five feet eight inches. This is beyond

* The habits of the Turkey in a wild state have been so well and minutely described by the Prince of Musignano and Mr Audubon, that we could not with propriety introduce a substitute, and we have therefore adopted the more interesting parts of their descriptions.

the average size, and the bird was a remarkably fine specimen. The extraordinary accounts of the great weight and size of the Wild Turkey have been only the licensed tales of travellers, heightened by the idea, that a New World must produce every thing on a scale proportioned to its extent *. Mr Audubon says, that from 15 lb. to 18 lb. may be a fair estimate of their average weight; and he only once saw one in the Louisville market which weighed 36 lb.: the tuft of hair on the breast of this bird measured upwards of a foot. Bonaparte confirms this account, but says that birds of 30 lb. are not rare, and had ascertained the existence of some which weighed 40 lb. The male Turkey may be said to be adult at the third year though it increases in both beauty and weight for some seasons afterwards. Upon the approach of the first winter, the bunch of hair upon the breast begins to appear: at the commencement of the second, it is from three to four inches in length, and the caruncules about the head and neck have become large, and have assumed their deep and livid hue; by the third winter, all these marks of maturity have nearly reached their greatest development.

The Female which we have represented on our Plate II., has been copied from Mr Audubon's

* Temminck gives the weight from 20 lb. to 80 lb. Pig et Gall. ii. 379. Clayton, in his Account of Virginia, 50 lb. even 60 lb.

beautiful Illustrations; and we have to ask his forgiveness for having done so without previously obtaining his permission. The average weight of a hen is about 9 lb.; but in strawberry time they sometimes reach 13 lb. and are so fat as to burst open when falling, after being shot. In length, the female is only about 3 feet 4 inches. The head and neck are not so naked, and there is no trace of spurs upon the legs. The general shade of the plumage is of a grayer tint, each feather having a metallic band, less brilliant than that of the male, and is then tipped with a blackish bar, and a grayish terminal fringe.

We shall now introduce the account of their manners fron the Prince of Musignano's continuation.

"The males, usually termed *gobblers*, associate in parties, numbering from ten to a hundred, and seek their food apart from the females; whilst the latter either move about singly with their young, then nearly two-thirds grown, or, in company with other females and their families, form troops, sometimes consisting of seventy or eighty individuals, all of which are intent on avoiding the old males, who, whenever opportunity offers, attack and destroy the young, by repeated blows on the skull. All parties, however, travel in the same direction, and on foot, unless they are compelled to seek their individua safety by flying from the hunter's dog, or their march is impeded by a large river. When about to cross

a river, they select the highest eminences, that their flight may be the more certain; and here they sometimes remain for a day or more, as if for the purpose of consultation, or to be duly prepared for so hazardous a voyage. During this time the males *gobble* obstreperously, and strut with extraordinary importance, as if they would animate their companions, and inspire them with the utmost degree of hardihood; the females and young also assume much of the pompous air of the males, the former spreading their tails, and moving silently around. At length the assembled multitude mount to the tops of the highest trees, whence, at a signal note from a leader, the whole together wing their way towards the opposite shore. All the old and fat ones cross without difficulty, even when the river exceeds a mile in width; but the young, meagre, and weak, frequently fall short of the desired landing, and are forced to swim for their lives; this they do dexterously enough, spreading their tails for a support, closing their wings to the body, stretching the neck forwards, and striking out quickly and forcibly with their legs. If, in thus endeavouring to regain the land, they approach an elevated or inaccessible bank, their exertions are remitted, they resign themselves to the stream for a short time, in order to gain strength, and then, with one violent effort, escape from the water. But in this attempt all are not successful; some of the weaker, as they cannot rise sufficiently high in the air to clear the bank, fall

again and again into the water, and thus miserably perish. Immediately after these birds have succeeded in crossing a river, they for some time ramble about without any apparent unanimity of purpose, and a great many are destroyed by the hunters, although they are then least valuable.

"The wild turkeys do not confine themselves to any particular food; they eat maize, all sorts of berries, fruits, grasses, beetles; and even tadpoles, young frogs, and lizards, are occasionally found in their crops; but where the pecan nut is plenty, they prefer that fruit to any other nourishment; their more general predilection is, however, for the acorn, on which they rapidly fatten. When an unusually profuse crop of acorns is produced in a particular section of country, great numbers of turkeys are enticed from their ordinary haunts in the surrounding districts. About the beginning of October, while the mast still remains on the trees, they assemble in flocks, and direct their course to the rich bottom lands. At this season they are observed in great numbers on the Ohio and Missisippi. The time of this irruption is known to the Indians by the name of the *turkey month*.

"When the turkeys have arrived in their land of abundance, they disperse in small flocks, composed of individuals of all sexes and ages intermingled, who devour all the mast as they advance; this occurs about the middle of November. It has been observed, that, after these long journeys, the turkeys

become so familiar as to venture on the plantations, and even approach so near the farm-houses as to enter the stables and corn-cribs in search of food; in this way they pass the autumn, and part of the winter. During this season, great numbers are killed by the inhabitants, who preserve them in a frozen state, in order to transport them to a distant market.

"Early in March they begin to pair; and, for a short time previous, the females separate from, and shun their mates, though the latter pertinaciously follow them, uttering their gobbling note. The sexes roost apart, but at no great distance, so that, when the female utters a call, every male within hearing responds, rolling note after note, in the most rapid succession; not as when spreading the tail and strutting near the hen, but in a voice resembling that of the tame turkey, when he hears any unusual or frequently repeated noise. Where the turkeys are numerous, the woods, from one end to the other, sometimes for hundreds of miles, resound with this remarkable voice of their wooing, uttered responsively from their roosting places. This is continued for about an hour; and, on the rising of the sun, they silently descend from their perches, and the males begin to strut, for the purpose of winning the admiration of their mates.

"If the call be given from the ground, the males in the vicinity fly towards the individual, and, whether they perceive her or not, erect and spread their

tails, throw the head backwards, distend the comb and wattles, strut pompously, and rustle their wings and body-feathers, at the same moment ejecting a puff of air from the lungs. Whilst thus occupied, they occasionally halt to look out for the female, and then resume their strutting and puffing, moving with as much rapidity as the nature of their gait will admit. During this ceremonious approach, the males often encounter each other, and desperate battles ensue, when the conflict is only terminated by the flight or death of the vanquished."

The conqueror now selects the objects of his gallantry, and one or more females thus associated follow their favourite, and roost in his immediate neighbourhood, if not upon the same tree, until they begin to lay, when they change their mode of life, in order to save their eggs, which the male uniformly breaks, if in his power. After the love season, the sexes again separate, the males cease entirely to gobble, and "retire and conceal themselves by prostrate trees, in secluded parts of the forest, or in the almost impenetrable privacy of a cane-brake. Rather than leave their hiding-places, they suffer themselves to be approached within a short distance, when they seek safety in their speed of foot; at this season, however, they are of no value to the hunter, being meagre and covered with ticks. By thus retiring, using very little exercise, and feeding on peculiar grasses, they recover their flesh and strength,

when they again congregate, and recommence their rambles.

"About the middle of April, when the weather is dry, the female selects a proper place in which to deposit her eggs, secured from the encroachment of water, and, as far as possible, concealed from the watchful eye of the crow: this crafty bird espies the hen going to her nest, and having discovered the precious deposit, waits for the absence of the parent, and removes every one of the eggs from the spot, that he may devour them at leisure. The nest is placed on the ground, either on a dry ridge, in the fallen top of a dead leafy tree, under a thicket of sumach or briars, or by the side of a log; it is of a very simple structure, being composed of a few dried leaves. In this receptacle the eggs are deposited, sometimes to the number of twenty, but more usually from nine to fifteen; they are whitish, spotted with reddish brown, like those of the domestic bird. Their manner of building, number of eggs, period of incubation, &c. appear to correspond throughout the Union, as I have received exactly similar accounts from the northern limits of the turkey range, to the most southern regions of Florida, Louisiana, and the western wilds of Missouri.

"The female always approaches her nest with great caution, varying her course so as rarely to reach it twice by the same route; and, on leaving her charge, she is very careful to cover the whole with dry leaves, with which she conceals it so art-

fully, as to make it extremely difficult, even for one who has watched her movements, to indicate the exact spot; hence few nests are found, and these are generally discovered by fortuitously starting the female from them, or by the appearance of broken shells, scattered around by some cunning lynx, fox, or crow. When laying or sitting, the turkey hen is not readily driven from her post by the approach of apparent danger; but, if an enemy appears, she crouches as low as possible, and suffers it to pass. A circumstance related by Mr Audubon will shew how much intelligence they display on such occasions; having discovered a sitting hen, he remarked that, by assuming a careless air, whistling, or talking to himself, he was permitted to pass within five or six feet of her; but, if he advanced cautiously, she would not suffer him to come within twenty paces, but ran off twenty or thirty yards with her tail expanded, when, assuming a stately gait, she paused on every step, occasionally uttering a chuck. They seldom abandon their nests on account of being discovered by man; but should a snake, or any other animal, suck one of the eggs, the parent leaves them altogether. If the eggs be removed, she again seeks the male, and recommences laying, though otherwise she lays but one nest of eggs during the season. Several turkey hens sometimes associate, perhaps for mutual safety, deposit their eggs in the same nest, and rear their broods together. Mr Audubon once found three females sitting on forty-two eggs. In

such cases, the nest is constantly guarded by one of the parties, so that no crow, raven, nor even polecat, dares approach it.

"The mother will not forsake her eggs, when near hatching, while life remains; she will suffer an enclosure to be made around and imprison her, rather than abandon her charge. Mr Audubon witnessed the hatching of a brood, while thus endeavouring to secure the young and mother. 'I have lain flat,' says he, 'within a very few feet, and seen her gently rise from the eggs, look anxiously towards them, chuck with a sound peculiar to the mother on such an occasion, remove carefully each half empty shell, and with her bill caress and dry the younglings, that already stand tottering and attempting to force their way out of the nest.'

"When the process of incubation is ended, and the mother is about to retire from the nest with her young brood, she shakes herself violently, picks and adjusts the feathers about the belly, and assumes a different aspect; her eyes are alternately inclined obliquely upwards and sideways; she stretches forth her neck in every direction, to discover birds of prey or other enemies; her wings are partially spread, and she softly clucks to keep her tender offspring close to her side. They proceed slowly, and, as the hatching generally occurs in the afternoon, they sometimes return to pass the night in the nest. While very young, the mother leads them to elevated dry places, as if aware that humidity, during the first few

days of their life, would be very dangerous to them, they having then no other protection than a delicate, soft, hairy down. In very rainy seasons wild turkeys are scarce, because, when completely wetted, the young rarely survive.

" At the expiration of about two weeks, the young leave the ground on which they had previously reposed at night under the female, and follow her to some low, large branch of a tree, where they nestle under the broadly curved wings of their vigilant and fostering parent. The time then approaches in which they seek the open ground or prairie land during the day, in search of strawberries, and subsequently of dewberries, blackberries, and grasshoppers; thus securing a plentiful food, and enjoying the influence of the genial sun. They frequently dust themselves in shallow cavities of the soil, or on ant-hills, in order to clean off the loose skin of their growing feathers, and rid themselves of ticks and other vermin.

" The young turkeys now grow rapidly, and in the month of August, when several broods flock together, and are led by their mothers to the forest, they are stout and quite able to secure themselves from the unexpected attacks of wolves, foxes, lynxes, and even cougars, by rising quickly from the ground, aided by their strong legs, and reaching with ease the upper limbs of the tallest tree. Amongst the numerous enemies of the wild turkey, the most dreaded are the large diurnal and nocturnal birds of

prey, and the lynx (*Felis rufa*), who sucks their eggs, and is extremely expert at seizing both parent and young; he follows them for some distance, in order to ascertain their course, and then, making a rapid circular movement, places himself in ambush before them, and waits until, by a single bound, he can fasten on his victim.

"The following circumstance is related by Bartram:—'Having seen a flock of turkeys at some distance, I approached them with great caution, when, singling out a large cock, and being just on the point of firing, I observed that several young cocks were affrighted, and in their language warned the rest to be on their guard against an enemy, who I plainly perceived was industriously making his subtle approaches towards them, behind the fallen trunk of a tree, about twenty yards from me. This cunning fellow-hunter was a large fat wild cat or lynx; he saw me, and at times seemed to watch my motions, as if determined to seize the delicious prey before me; upon which I changed my object, and levelled my piece at him. At that instant my companion, at a distance, also discharged his piece, the report of which alarmed the flock of turkeys, and my fellow hunter, the cat, sprang over the log, and trotted off.'

"These birds are guardians of each other, and the first who sees a hawk or eagle, gives a note of alarm, on which all within hearing lie close to the ground. As they usually roost in flocks, perched on the naked

branches of trees, they are easily discovered by the large owls, and, when attacked by these prowling birds, often escape by a somewhat remarkable manœuvre. The owl sails around the spot to select his prey; but, notwithstanding the almost inaudible action of his pinions, the quick ear of one of the slumberers perceives the danger, which is immediately announced to the whole party by a *chuck;* thus alarmed, they rise on their legs, and watch the motions of the owl, who, darting like an arrow, would inevitably secure the individual at which he aimed, did not the latter suddenly drop his head, squat, and spread his tail over his back; the owl then glances over without inflicting any injury, at the very instant that the turkey suffers himself to fall headlong towards the earth, where he is secure from his dreaded enemy.

"On hearing the slightest noise, wild turkeys conceal themselves in the grass, or among shrubs, and thus frequently escape the hunter, or the sharp-sighted birds of prey. The sportsman is unable to find them during the day, unless he has a dog trained for the purpose; it is necessary to shoot them at a very short distance, since, when only wounded, they quickly disappear, and, accelerating their motion by a sort of half flight, run with so much speed, that the swiftest hunter cannot overtake them. The traveller, driving rapidly down the declivity of one of the Alleghanies, may sometimes see several of them before him, that evince no urgent desire to get out of

the road; but on alighting, in hopes of shooting them, he soon finds that all pursuit is vain.

"In the spring, when the males are much emaciated by their attendance on the females, it sometimes may happen that, in cleared countries, they can be overtaken by a swift cur dog, when they will squat, and suffer themselves to be caught by the dog or hunter, who follows on horseback. But from the knowledge we have gained of this bird, we do not hesitate to affirm, that the manner of running down turkeys, like hares or foxes, so much talked of, is a mere fable, as such a sport would be attended with very trifling success. A turkey hound will sometimes lead his master several miles, before he can a second time *flush* the same individual from his concealment; and even on a fleet horse, after following one for hours, it is often found impossible to *put it up*. During a fall of melting snow, turkeys will travel extraordinary distances, and are often pursued in vain by any description of hunters; they have then a long straddling manner of running, very easy to themselves, but which few animals can equal. This disposition for running, during rains or humid weather, is common to all gallinaceous birds.

"The males are frequently decoyed within gunshot, in the breeding season, by forcibly drawing the air through one of the wing bones, producing a sound very similar to the voice of the female; but the performer on this simple instrument must commit no error, for turkeys are quick of hearing, and, when

frequently alarmed, are wary and cunning. Some of these will answer to the call without advancing a step, and thus defeat the speculations of the hunter, who must avoid making any movement, inasmuch as a single glance of a turkey may defeat his hopes of decoying them. By imitating the cry of the barred owl (*Strix nebulosa*), the hunter discovers many on their roosts, as they will reply by a gobble to every repetition of this sound, and can thus be approached with certainty about daylight, and easily killed.

" Wild turkeys are very tenacious of their feeding grounds, as well as of the trees on which they have once roosted. Flocks have been known to resort to one spot for a succession of years, and to return after a distant migration in search of food. Their roosting place is mostly on a point of land, jutting into a river, where there are large trees. When they have collected at the signal of a repeated gobbling, they silently proceed towards their nocturnal abodes, and perch near each other : from the number sometimes congregated in one place, it would seem to be the common rendezvous of the whole neighbourhood. But no position, however secluded or difficult of access, can secure them from the attacks of the artful and vigilant hunter, who, when they are all quietly perched for the night, takes a stand previously chosen by daylight, and, when the rising moon enables him to take sure aim, shoots them down at leisure, and by carefully singling out those on the lower branches

first, he may secure nearly the whole flock, neither the presence of the hunter, nor the report of his gun, intimidating the turkeys, although the appearance of a single owl would be sufficient to alarm the whole troop: the dropping of their companions from their sides excites nothing but a buzzing noise, which seems more expressive of surprise than fright. This fancied security or heedlessness of danger, while at roost, is characteristic of all the gallinaceous birds of North America.

"The more common mode of taking turkeys is by means of *pens*, constructed with logs, covered in at top, and with a passage in the earth under one side of it, just large enough to admit an individual when stooping. The ground chosen for this purpose is generally sloping, and the passage is cut on the lower side, widening outwards. These preparations being completed, Indian corn is strewed for some distance around the pen, to entice the flock, which, picking up the grain, is gradually led towards the passage, and thence into the enclosure, where a sufficient quantity of corn is spread to occupy the leader until the greater part of the turkeys have entered. When they raise their heads and discover that they are prisoners, all their exertions to escape are directed upwards and against the sides of the pen, not having sagacity enough to stoop sufficiently low to pass out by the way they entered, and thus they become an easy prey, not only to the experienced hunter, but even to the boys on the frontier settlements.

" In proportion to the abundance or scarcity of food, and its good or bad quality, they are small or large, meagre or fat, and of an excellent or indifferent flavour; in general, however, their flesh is more delicate, more succulent, and better tasted than that of the tame turkey: they are in the best order late in the autumn, or in the beginning of winter. The Indians value this food so highly when roasted, that they call it 'the white man's dish,' and present it to strangers as the best they can offer.

" The Indians make much use of their tails as fans; the women weave their feathers with much art on a loose web made of the rind of the birch-tree, arranging them so as to keep the down on the inside, and exhibit the brilliant surface to the eye. A specimen of this cloth is in the Philadelphia Museum; it was found enveloping the body of an Indian female, in the great Saltpetre cave of Kentucky."

We have already mentioned, that the turkey, in a domesticated state, has been distributed to almost every part of the civilized world; but, contrary to the general effect of domestication, it has rather deteriorated than improved in that state. " So far from having gained by the care of man, and the abundance of food accessible in its state of domestication, this bird has degenerated, not only in Europe and Asia, but, which is certainly extraordinary, even in its native country. The domesticated turkey of America, accustomed as it is to roam in the woods and open fields almost without restraint,

is in no respect superior to that of the European poultry-yard." Crossing the tame breed with the wild inhabitants of the forests, is said again to improve them, and is often resorted to in Pennsylvania, and a few of the other States.

"This crossing often occurs in countries where wild and tame turkeys are found. It is well known that they will readily approach each other; and such is the influence of slavery even upon the turkey, that the robust inhabitant of the forest will drive his degenerate kinsfolk from their own food, and from their females, being generally welcomed by the latter and by their owners, who well know the advantages of such a connexion. The produce of this commixture is much esteemed by epicures, uniting the luscious obesity of the one, with the wild flavour of the other. A gentleman, residing in Westchester county, New York, a few years since procured a young female wild turkey, in order to make the experiment of crossing the breed; but, owing to some circumstance, it did not succeed, and in the ensuing spring the female disappeared. In the following autumn she returned, followed by a large brood; these were quite shy, but, by a little management, they were secured in a coop, and the mother allowed her liberty. She remained on the farm until the succeeding spring, when she again disappeared, and returned in autumn with another brood. This course she has repeated for several successive years.*"

The eggs of the wild birds are frequently hatch-

* Bona arte.

ed with the view of crossing, and also to rear as decoy birds; for although they retain much of the wild habit, and are easily frightened, they feed with the tame stock and in the woods alternately, and entice their forest neighbours to partake of the food of the yard.

In the European poultry-yard, turkeys of almost every shade of colour are found; and the curious effect which domestication exercises over the plumage of birds, is seen in them to its utmost range. The gray or gray and white varieties are most and generally esteemed. Some persons, again, fancy those of the most unsullied white, as feeding to a large size, and having pure and tender flesh; while, again, those of a reddish or cream colour are alone admitted. The most hardy variety, however, certainly is what is called the black. The general colour is black, but various shades of brown occur, and the whole plumage has more of the rich bronzy lustre of the wild bird than any of the others. We successfully cultivated this variety for several years; the young were reared with the greatest ease, and with very few accidents, and they reached a weight of from twenty to twenty-five pounds, without *cramming*, or other extra feeding. It was a curious circumstance, that almost every brood had one of a pure white, though the parents and rest of the flock were black. M. Temminck mentions a variety of the turkey, which was kept by Madame Backer in a menagerie or aviary at the Hague. It had a crest

springing from the crown, of black or white feathers. The same lady reared a flock of this variety of a pale reddish tint, and having the crest ample, and of a pure white.

Upon the Continent, Languedoc and Provence have been long celebrated for their breed of turkeys. In this country, Norfolk, Suffolk, and some of the neighbouring counties, contribute most to the London markets. They are an article of much importance to the cottagers and farmers; and, during autumn, flocks of many hundreds are met on the roads, upon their way to town, driven and kept in order by a long stick, with a lash of red rag. Dr Latham tells us, that, one Saturday night and Sunday morning, no fewer than 1700 turkeys left Norwich by the coaches; and, two days after, half as many more. In some of the extensive parks and royal forests, turkeys are also kept in considerable numbers, where they soon fatten upon the mast and acorns; and, in addition to the emolument yielded by their sale, add much to the picturesque beauty of the woodland scene. Many were thus kept in Richmond Park*; and the great park of Windsor Forest, says Gilpin, always alive to the fitting accessories for forest scenery, was much frequented by wild turkeys. It could hardly have had a more beautiful decoration. "Birds are among the most picturesque objects; their forms and plumage are both picturesque, and the turkey is both a large bird, and, being gregarious,

* Pennant, Phil. Trans.

form groups which become objects of consequence." Many of the larger gallinaceous birds might be employed both as beautiful and useful adornments to the scenery of a modern park; and, if water ranked among its advantages, another tribe might be introduced with equal effect.

The turkey is generally esteemed a stupid bird, and, in its tame state, perhaps with truth. Its vigilance and cunning in its native forests, however, often baffle the experience of well trained hunters; and the attention and cunning of the female are noted by Mr Audubon. The attention of the male to the young is also, in some cases, extraordinary. We have known him regularly attend and protect the female and brood from dogs, or other intruders; and, in two instances, to take the sole charge upon himself, refusing to admit the female to any share of his cares. The same bird frequently drove the hen from her nest, and sat upon the eggs until hatched*.

Mr Audubon relates a curious anecdote of the turkey, which also illustrates the disposition of the dog.

"While at Henderson, on the Ohio, I had, among many other wild birds, a fine male turkey, which had been reared from its earliest youth under my care, it having been caught by me when probably not more than two or three days old. It became so

* I once knew it take place upon two addled eggs, which the hen had long persevered upon, and upon which he kept his place for a fortnight.—Ed.

tame, that it would follow any person who called it, and was the favourite of the little village. Yet it would never roost with the tame turkeys, but regularly betook itself, at night, to the roof of the house, where it remained until dawn. When two years old, it began to fly to the woods, where it remained for a considerable part of the day, to return to the enclosure as night approached. One morning I saw it fly off, at a very early hour, to the woods, and took no particular notice of that circumstance. Several days elapsed, but the bird did not return. I was going towards some lakes near Green River to shoot, when, having walked about five miles, I saw a fine large gobbler cross the path before me, moving leisurely along. Turkeys being then in prime condition for the table, I ordered my dog to chase it, and put it up. The animal went off with great rapidity, and, as it approached the turkey, I saw, with great surprise, that the latter paid little attention. Juno was on the point of seizing it, when she suddenly stopped, and turned her head towards me. I hastened to them, but you may easily conceive my surprise, when I saw my own favourite bird, and discovered that it had recognised the dog, and would not fly from it, although the sight of a strange dog would have caused it to run off at once."

The second species of Turkey is

MELEAGRIS OCELLATA.
(The Ocellated Turkey)
Native of the Bay of Honduras.

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THE OCELLATED TURKEY.

Meleagris ocellata.—CUVIER.

PLATE III.

Meleagris ocellata, *Cuvier, Memoires du Museum*, vi. pl. 1. —Dindon ocellé, *Temminck, Pl. Coloriées*, pl. 112.—Honduras Turkey, *Latham, General History of Birds*, viii. p. 129.

THIS splendid and curious bird was first described by the Baron Cuvier in the Memoires du Museum, from the specimen which graced the collection of Mr Bullock, and which, at the dispersion of that valuable museum, was purchased by the French Government; and we believe that it is still the only specimen known to exist in any collection.

The bird was taken by the crew of a vessel, who were cutting wood in the Bay of Honduras. Three specimens were seen, and they succeeded in capturing one of them alive, which was sent to Sir Henry Halford, but, meeting with an accident in the Thames, it died before being delivered, and that gentleman presented it to Mr Bullock for his exhibition in the Egyptian Hall, then in all its splendour, and the finest in Britain. Nothing was recorded of its habits, and it is not known whether the tail is capable

of being expanded as in the common species. The following is nearly the description, taken from that of Temminck.

" In size it is nearly equal to the common turkey, but the tail is not so ample. The bill is of the same form, and the base with a caruncle, which is apparently capable of the same dilatations and contractions with that of its congener. The head and two-thirds of the neck are naked, and appear of the same livid colour, but without any trace of the fleshy tubercles on the lower part, which are so prominent a feature in the physiognomy of the common turkey. The only appearance of any is five or six above each eye, five upon the centre of the crown, and upon the sides of the neck six or seven, arranged in a line above each other, and at nearly equal distances. Upon the breast there was no trace of the tuft of hair, but the plumage was somewhat damaged, and the knowledge of other specimens must decide whether this character is also present in this bird. The form of the feathers is rounded at the ends; those of the lower part of the neck, the upper part of the back scapulars, and all the lower part of the body, are of a bronzed green, terminated by two bands, the one black, and the next, or that next the tip, of a golden bronze colour; on the other parts of the back, the distribution of the colours is the same, but as they approach the coverts of the tail, the tints become more vivid, the bronzed part becomes of a rich blue, or emerald-green, according to the change of light,

and the outer band becomes broader, assumes a more golden lustre, and upon the rump, being tinted with red, the shades become similar in beauty to the throat of the ruby-crested humming-bird; the brightness of this border becomes still more striking, being separated from the blue by a band of deep velvetty black. The base of each feather on those parts concealed, is gray, mottled with black; upon the tail and upper coverts, this gray part becomes apparent, and the marks assume the form of bars, one of which, immediately succeeding the blue band, surrounds it, and makes each feather appear eyed or ocellated. From the distribution of the tail-coverts and lower feathers of the rump, there are four rows with these eyed tips, where the gray basal half of the feathers is visible, and which combines very chastely, or keeps down as it were the lustre of the others. The tail is rounded at the end, and only contains fourteen feathers. The lower parts of the body are banded with bronze black and green, but without the brilliant lustre of the upper parts. The quills and bastard pinions are broad, bordered obliquely with white, which almost entirely occupies the outer margin of the first. The secondaries have the outer webs pure white, the bands in the centre not appearing when the wings are closed; the uppermost are blotched in the centre with black, having a green lustre, which, as the plumes shorten, expands more

over their surface, leaving the last with the edge only white. The greater coverts are chestnut. The feet and legs are of a rich lake or purplish red.

Genus PAVO—*Linnæus.*

This form or genus is typical of the family with which we are now employed, and should most properly have been placed first. It is at once characterized by the very great development of the upper tail-coverts, or train, as they are called, which it is enabled to raise and spread in a circle by means of the true tail, composed of strong and powerful feathers. There are only two species known; both inhabit the Continent and Islands of India, and they present a plumage certainly the most splendid among the whole feathered world. Their frequency in our barnyards has accustomed us to this splendour; but when the question comes really to be asked, "Which is the most splendid bird?" we shall be able to find no competitor; there are many birds which have tints more exquisite for their delicacy, or more dazzlingly brilliant, but none present such a mass of gorgeous adornment as the Peacock.

The splendour of such a bird could not be seen without attracting attention, and we accordingly find it mentioned at a very early period. The earliest notice of it will perhaps be found in the Bible; it attracted the notice of the mariners of Solomon, who, in their southern expedition, among many other productions of nature, carried these birds to their royal master. We afterwards lose sight of it until discovered

of the army of Alexander, who felt such admiration for it, as to order the infliction of a severe penalty upon its destroyers. Hence it found its way to Greece, and Rome, and Europe generally, and had to perform its part in the luxurious entertainments of the ancients, while it was thought worthy of being dedicated to the royal Juno, and of being handed down to posterity upon the coinage of the countries. At an early period of English history, when the baronial entertainments were characterized by grandeur and pompous ceremonies, approaching nearly to the magnificence of royalty, there was scarcely any noble feast without "pecokkes," which were stuffed with spices and sweet herbs, roasted and served up whole, and covered, after dressing, with the skin and feathers. In our own times, both the young and the eggs are often seen at the tables of the opulent. They are also reared as picturesque accessaries for the park or lawn, in which they will breed and rear their young without assistance, and with a little attention only during winter. In their native countries, superb dresses and shades are made of the skins and train, and, adorned with precious stones, form a fitting accompaniment to the magnificence and show of Eastern manners.

Peacock-shooting is a favourite amusement in India, where, in some parts, they are extremely abundant. "About the passes in the Jungletery district," says Colonel Williamson, "I have seen such quantities of pea-fowls as have absolutely surprised me.

Whole woods were covered with their beautiful plumage, to which a rising sun imparted additional brilliancy. The small patches of plain among the long grass, most of them cultivated, and with mustard then in bloom, which induced the birds to feed, increased the beauty of the scene; and I speak within bounds when I assert, that there could not be less than twelve or fifteen hundred pea-fowls, of various sizes, within sight of the spot where I stood for near an hour.

"When they are in numbers scattered in a jungle, it is easy to get a shot; but I have always found much difficulty when the birds flock together, as they frequently do, to the amount of forty or fifty. At such times it is not easy to raise them. They run remarkably fast, and I doubt whether a heavy spaniel or pointer could raise them. When on the wing, they fly heavy and strong, generally within an easy shot; but if only winged, they speedily recover, and, if not closely pursued, will nine times in ten disappear. These plantations are their favourite shelter, being close above, so as to keep off the solar rays, and open at the bottom sufficiently to admit a free passage for the air. If there be trees near such spots, the peacock may be seen mounting into them every evening towards dusk to roost, and in which they generally continue till the sun rises, when they descend to feed, and pass the midday in the heavy covers. They are very jealous of all quadrupeds, especially of dogs; and when peacocks are discover-

ed on a tree situate on a plain, if a dog be loose and hunt near it, the bird will rarely move from its situation, though it will probably shew extreme uneasiness.

"It will appear curious, but it is very certain," continues the Colonel, "that peacocks have often been hunted and run down by horsemen. The wings of a peacock are by no means proportioned to the weight of its body and limbs; besides, they are not accustomed to long flights, and are soon out of wind. When a bird is discovered in a tree standing in a plain, which is frequently the case when game is abundant, a person mounted on a tolerably active and governable horse, provided with a lash whip, may, after keeping as near as possible during the first flight, and urging the bird, when it alights, to its utmost exertion, so completely fatigue it, as to find some opportunity for whipping, and perhaps entangle the whip so as to obtain a complete command." The same has been noticed in the account of the Wild Turkey; but we should consider the opportunities for practising such a chase very uncommon, and that the instances of escape will perhaps exceed those of capture.

Peacocks are frequently found entirely white. This variety occurs, according to Temminck, in a wild state as well as in domestication, and is not caused, as was alleged by some, from being transported from a warm to a temperate and even cold climate. If, however, we may judge from the analogy

of other gallinaceous birds, this colour is much more frequent in domestication than in its native country. Pied varieties are also sometimes seen; and when the deep blue of the neck and breast is contrasted with pure white, they form a beautiful and much sought for state among collectors for a menagerie. In the white variety, the feathers, from retaining their structure, exhibit all the markings of the tail and other parts distinctly, according as the light falls upon them. To illustrate this genus we have figured

THE JAVANESE PEACOCK.

Pavo muticus—Linnæus.

Plate IV.

Pavo Javanensis, *U. Aldrovandus, Ornithologia*, ii. p. 33–34.—Pavo muticus, *Linnæus.—Shaw's Naturalist's Miscellany.*—Japan Peacock, *Latham, General Hist. of Birds*, viii. p. 116.—Pavos speciferus, *Vieillot, Galerie des Oiseaux*, pl. 202.—Paon specifere, *Temminck, Histoire Natur. des Pigeons et Gallinacés*, ii. p. 56.—Pavo Javanicus, *Horsfield, Transactions of Linn. Society*, xiii. p. 185.—The Aldrovandine Peacock, Pavo Aldrovandi, *Wilson's Illustrations of Zoology*, plates xiv. and xv.

The history of this very beautiful species is yet little known, though specimens of it, both preserved for the museum, and also alive, are now much more frequently brought to this country, and there can be little doubt, that attention would soon render it as frequent in our barn-yards as the common species.

The first notice of this bird is in the voluminous work of Ulysses Aldrovandus, who has given two of his peculiar figures of it, and which at once indicate the species by the form of the crest. These were taken from drawings sent by the Emperor of Japan to the Pope, and served for the ground-work

the yellow skin which surrounds the eyes. The following is a more detailed description of a beautiful specimen in the Edinburgh Museum, from which our illustration is taken.

This bird is nearly similar in size to the common peacock, but the whole plumage is of more subdued brilliancy. The principal distinction is in the form of the feathers of the crest, which, instead of a nearly bare shaft, and round moon at the tip, as in the common peacock, are lengthened, webbed from the base nearly of an equal breadth, and compared by Temminck to the tail of the long-tailed titmouse. The bare space upon the cheeks, and round the eyes, is of a fine gamboge-yellow. The head, neck, and fore part of the breast, are of a peculiar greenish tint, being brilliant, with golden reflections in some lights; in others appearing dull and subdued. The lower parts are of a dull deep greenish brown, instead of the rich blue of the well known bird. The train is not so ample in proportion, and the eyes or moons are less numerous; the centre of each is rich blue, encircled with green, brown, and finally with a bronzed ring. The shoulders and wing-coverts are without the beautifully waved appearance of the common peacock, and are of a deep blue. The edge of the wing and quills are pale yellowish-red. A gradual change from the young state to the full plumage takes place, and it is the third moult before the complete train is displayed.

Genus POLYPLECTRON, *Temm.*

This genus was established by Temminck, from the l'Eperonne of Buffon, the Peacock Pheasant of Edwards and Sonnerat, the Pavo bicalcaratus and Tibetanus of Gmelin's Linnæus. We think there is no doubt that both this species and that of our Plate VI. was known to Gmelin; while the representations of Buffon and Sonnerat might have been taken from either. Prior ornithologists retained these birds with the peacocks, and that place is assigned to it in the last edition of Cuvier's Regne Animal. Since the institution of the genus, however, the P. Tibetanus has been examined, and two additional birds have been discovered, which agree with the characters assigned to the type, and all differ from the peacocks in the modifications from which Temminck has proposed to form his distinctions.

They inhabit the Indian Islands or China, and seem almost equally hardy with the peacock, living and thriving well in confinement; and, if they could be procured in sufficient numbers to ensure a stock, would form a most lovely addition to the ornamental poultry-yard. The chief distinction is in the form of the tail; it is rounded and very ample; the feathers stiff, and forming a plane surface. It is

never erected, like that of the two preceding genera, but is capable of a very wide expansion. It has also what its describers term the upper range of feathers. These cover the first half of the tail; and if the lower range or true tail were removed, the upper would appear to an unaccustomed observer to be perfect, and the only feathers belonging to this organ. Another singularity is in the tarsi being generally furnished with two spurs upon each, sometimes three, and, in a few instances, three on one leg, and two only on that opposite. The cheeks are covered with feathers, and the whole plumage is perfectly different in structure from that of the true peacocks. The fourth species (Plate VII.) varies in the form of the tail, which becomes much more lengthened, the shape of the feathers resembling somewhat those of the next genus to be described. We shall first notice that which seems to have been the species first known, or brought to Europe; it is the

ARGUS POLYPLECTRON.

Polyplectron bicalcaratum—TEMMINCK.

Pavo bicalcaratus, *Linnæus*, *Gmelin*.—Polyplectron bicalcaratum, Eperonnier argus, *Temminck*.—Le Paon de Malacca, *Sonnerat*.

It is evident from the characters given by Gmelin, that two species of this genus were known, the species

we are about to describe, and the P. chinquis of Temminck, for which the old name of Tibetanus should be retained. The length of the Argus polyplectron is about 18 or 19 inches. The feathers of the forehead are lengthened to a crest, are large, of a brownish-black, and marked with white at the base. All the rest of the head and neck is covered with short feathers, of a dull black. The throat is whitish; and the cheeks and space surrounding the eyes is freer from feathers than those parts in the remaining species. The back, scapularies, and wing-coverts, are of a yellowish-brown, thickly sprinkled with black spots, and having at the tip of each feather an eyed spot of a rich bluish-green. The breast, belly, vent, and thighs, are umber-brown, having the shafts white. The quills are dull brown. The tail, composed of two ranges of feathers, and rounded, is of the same colour with the back, thickly mottled with black, and has the tip of each feather rufous, blotched with deep black. Near the end of each feather are the two beautiful eye-like spots, of a brilliant green, placed close together, and surrounded with a circle of black.

This bird, which is far from being common, is a native of Malacca; most probably also China and the Indian Islands. It may be easily distinguished from the P. Tibetanus, its nearest ally, by the less size, the comparative bareness of the cheeks, its larger crest, and the different form of the feathers compos-

ing it, and by the eye-like spots being much smaller, and surrounded only by a ring of black.

Our next Plate will give an idea of the general form of these birds. That which follows of the beautiful ocellated distribution of the markings of the plumage ; our first is

POLYPLECTRON EMPHANUM.
(The Crested Polyplectron)

Native of the Molucca Islands.

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THE CRESTED POLYPLECTRON.

Polyplectron emphanum—Temminck.

Plate V.

Eperonnier à Toupet, Polyplectron emphanum, *Temminck, Planches Coloriées*, p. 540.

This bird, of remarkably rich plumage, forms part of the collection of the Prince of Essling, and was supposed to have been received from the Sunda and Molucca Islands. It is about the size of the Argus polyplectron. The forehead and crown are adorned with a crest of long, narrow, and loose feathers, and, with the neck and breast, are of a rich bluish-black, with metallic reflections. Above the eyes there is a large white streak, and a patch of the same colour upon the auricular feathers, both of a pure and shining tint, rendered more conspicuous from the contrast of the surrounding parts. The belly and vent are deep black. The back and rump are of a dull brown, with irregular wavy bands of a paler tint. The wing-coverts and secondaries are of a brilliant blue, each tipped with a band of velvety black. The tail, very much rounded, is brown, marked with numerous minute spots of ochraceous white; it has, near the tip, on each side of the shaft,

a large ocellated oval spot, of a very brilliant and metallic green. These are surrounded with two circles, the first black, the next of a clear brown; and toward the end of each feather there is a bar of black, which, at the very tip, is succeeded by a narrow band of white. The legs, like the others, are armed with two spurs.

The female has not been yet discovered; and it may be remarked, that this species is by far the rarest in ornithological collections.

POLYPLECTRON CHINGUIS.

(The Thibetian Polyplectron)

Native of Thibet.

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THE THIBETIAN POLYPLECTRON.

Polyplectron Tibetanus.—Gmelin.

Plate VI.

Pavo Tibetanus, *Linn. Gmel.* ii. 731.—Peacock Pheasant, *Edwards.*—Eperonnier chinquis, Polyplectron chinquis, *Temminck, Planches Coloriées*, 539. Male.

This is another very beautiful species of Polyplectron, inhabiting, it is believed, the mountainous chain which separates Hindostan from Thibet, whence they are procured, and reared in the menageries of the wealthy Chinese. It is easily domesticated, and might be made to breed in confinement; the bird from which Temminck took his drawing and description having lived for five or six years in an aviary at the Hague.

The entire length of the Thibetian Polyplectron is 22 inches, the form rather light and elegant. It is without a crest; but the small feathers of the crown are turned forward, and appear in an irregular or disarranged state; they are of a greyish-brown. The throat is whitish. The feathers of the neck, the breast, and belly, are of a dull brown, crossed with transverse undulated bands of blackish-brown. The back, rump, and coverts of the tail, are of a clear brown, spotted, and transversely undulated with

greyish-white. The quills are brown, marked with greyish. The other feathers composing the wings are generally of a yellowish-grey tint, sprinkled with little bands of blackish-brown, and having at the extremity of each a large round eyed spot, of brilliant blue, with purple and opaline reflections. These are surrounded with a circle of deep black, which is again encircled with a ring of yellowish-white. The feathers composing the tail are of a dull brown, sprinkled with small spots of ochraceous yellow. Upon each of the twenty-two true tail-feathers, at about an inch and a half from the tip, and on those which have been called the upper range, at one inch from the tip, there are two oval spots, separated only by the shaft. They, like those upon the wing, have the double circles of deep black and yellowish-white, and are clouded with the same purple and blue reflections, but which scarcely equal the others in brilliancy.

The female is said by Temminck to differ only in the lesser brilliancy of the eyed spots, in having a shorter tail, and in the want of spurs. In the young, the plumage is of an earthy grey, marked with large brown spots and bands; at the first month the plumage becomes more irregular, and the space upon the wings and tail, where the spots are to appear, are seen, they are still deprived of their lustre, and there is no trace of the pale circle. At the third moult the plumage of these beautiful birds attains its perfection and brilliancy.

Lizars sc

POLYPLECTRON CHALCURUM

(Long-Tailed Polyplectron)

Native of Sumatra.

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LONG-TAILED POLYPLECTRON.

Polyplectron chalcurum.—Temminck.

PLATE VII.

Eperonnier chalcure, Polyplectron chalcurum, *Temminck, Planches Coloriées*, 519.

This bird differs from its congeners in wanting the ocellated spots on the various parts of the plumage, which is also entirely of a more sombre shade, and in the form of the tail, which becomes lengthened and runs into the form of that of Argus. Temminck is the only ornithologist who has described and figured it, and the specimen in the Parisian Museum, which served for the copy, he tells us, was unique. The head, neck, breast, belly, and wings, are of an umber brown; the back, greater coverts, and scapulars are of a reddish umber, having numerous waves or crosses of black; the tail, as we mentioned, is much longer than in any of the others, and has not the two ranges, as it were, of feathers, is brown, with green and violet reflections, and is mottled over with irregular spots of black. Each tarsus is armed with two sharp spurs. The total length of the spe-

cimen was about eighteen inches, and was received from the island of Sumatra.

Two additional species are figured by Mr Gray, in his Illustrations of Indian Zoology, but without descriptions. These figures are correct copies from the drawings collected by General Hardwick, and are the work of native artists. The first, Mr Gray has dedicated to the General, Polyplectron Hard wickii. It is nearly allied to the P. bicalcaratum. The ground colour of the plumage is ochrey yellow, with black spots and waves, the ocellated spots are surrounded with a black and yellow ring, and the head is furnished with a slightly bending forward greenish crest. Two of the dorsal feathers from each bird are also given; the distinctions are, that of P. Hardwickii has a yellowish ground, with irregular black spots, that of P. bicalcaratum, darkish grey, with pale yellow spots.

The other bird is named P. lineatum, apparently from a narrow pale line along the shaft of the feathers, particularly conspicuous on the rump. This, however, appears to me to be the young of some other species; there are no spurs on the tarsi, and the description which Temminck gives of the young state of P. ocellatum, is near to the plumage of this bird. Our next illustration represents the genus Argus of Temminck, containing a single species, which is

ARGUS GIGANTEUS.

(The Argus Pheasant, or Gigantic Argus)

Native of Batavia.

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THE ARGUS PHEASANT, OR GIGANTIC ARGUS.

Argus giganteus.—Temminck.

PLATE VIII.

Argus or Luen, *Philosophical Transactions*, 55, p. 88.—L'Argas ou Luen, *Buffon*.—Argus Pheasant, Phasianus Argus, *Latham's General History*, viii. p. 206.—L'Argus, Argus giganteus, *Temminck, Pigeons et Gallinacés*, ii. 411.—*Synopsis*, iii, 679.

This superb bird presents a very singular form among the Gallinaceous order, one which has puzzled most ornithologists into what genus it was to be placed, until Temminck thought of forming one to contain itself. It is chiefly remarkable for the super-abundant development of its plumage, particularly that of the wings; while its colours, though possessing little of the brilliant splendour of those which we have past, by a union of chaste tints and harmonious blending, produce an effect at once unique, striking, and pleasing.

The descriptions and figures were long imperfect, by reason of the skins being transmitted to Europe in a mutilated state, the head and feet being often wanting, and the wings only being sent. It was described in the Philosophical Transactions, and

also in those of Batavia, by the Baron Cuvier, but from imperfect specimens. Dr Latham collects the information of his predecessors, and that afforded to him by Dr Buchanan, and his figure of the Malay Peacock, evidently this bird, is taken from General Hardwick's drawings; the description in Sonnini's edition of Buffon is extracted from the Philosophical Transactions. M. Temminck appears to have been the first to have described this bird, from a series of specimens received from Batavia, where, with some other birds of splendid plumage, they form an article of commerce, and are exported as ornaments to different parts of dress, screens, or drapery. It is a native of Sumatra, probably some others of the Indian islands, but principally of the peninsula of Malacca; and although said, generally by ornithological writers, to inhabit China and Chinese Tartary, there exists no proof of specimens having been brought from thence.

In size the Argus is not larger than an ordinary fowl, but the length to the end of the two long tail feathers, is five feet three inches, these last being of themselves three feet eight inches. It is impossible to convey any idea of the markings and blending of the shades on many parts of this bird, and the following description will serve as only an indication of the colours. The throat, the anterior part of the neck, and the cheeks, are naked, or nearly so, having only a few black hairs dispersed over them. The head and back of the neck are covered with

short velvety feathers. The lower part of the neck, breast, belly, and thighs, are reddish brown, each feather regularly spotted with dull yellow and black; the upper part of the back, and lesser wing coverts, are covered with large black spots, separated by a narrow line of an ochreous tint; the upper tail covers are of a clear ochreous yellow, with brown spots; the longest of a paler tint, with the spots thicker than upon the back, and of a reddish brown in the centre. The tail is of a deep chestnut, sprinkled with white spots, surrounded with a black ring. The wings, of which the secondaries are three times the length of the quills, being about two feet ten inches long, from their unwieldy size, almost entirely deprive the bird of flight, but greatly accelerate its pace when running, and, acting as powerful sails, furnish it with a mode of transportation or escape, possessing great fleetness. The power of flying, however, adds M. Temminck, is not altogether denied to it; it sometimes rises from the ground, but the flight is always heavy, and kept up only for a short way, and upon these organs, and particularly upon the secondaries, is lavished the greater part of the beautiful adornment. When at rest, or not excited, these spots are hardly visible, but when in the presence of his females, the wings are expanded and trailed upon the ground, displaying their beauties as the peacock exhibits his train, or the turkey his tail. At this time the tail is comparatively spread, and is raised erect. When it rests, it is carried in a line

with the body, and with the two plumes folded together.

The young males possess none of the varied markings just now attempted to be described. They are of a uniform dull brown, spotted and irregularly blotched, reddish-yellow, brown, and black. After the first moult, there is still no appearance of the ocellated spots. The shafts of the feathers of the wings are black, the quills are of a dull brown, clouded with a line on the inner webs, and marked towards the tip with black and brown spots; the secondaries are of a uniform brown on the inner webs, but the outer ones have a ground of brownish-yellow, with black wavy bands, and the part where the ocellated spots are to appear are marked with black crescents surrounded with chestnut. After the second moult, all the colours of the adult acquire a regular distribution; after the third, they are still better defined, the showy spots are small, of an irregular form, and much less numerous than in the adults; and it is not until after the fourth moult, that the shades acquire their perfect brilliancy, and the markings their regularity*.

The female is still less known than the male. Among the birds sent from abroad, those of unobtrusive plumage are seldom included, and when commerce is the object, even a reiterated request fails in procuring the wished for specimens. With thirty males, Temminck thought himself fortunate

* Temminck.

in procuring two females. Like the male, the head and forepart of the neck is naked, a thick short down covers the top of the head, stretching down upon the neck, where it gradually lengthens, and assumes the form of feathers: these parts are of a brownish grey. The lower part of the neck, breast, and upper parts of the back, are of a chestnut red; the lower part of the back, rump, lesser wing coverts, and those of the tail, have, upon a yellowish-brown ground, numerous black transverse bands, some large, and others narrow in the form of zigzags; the tail, which has no long feathers, as in the male, folds together, and forms an angle like that of a hen; it is of a brownish chestnut, varied with spots and black bands, but the most remarkable difference is in the secondaries; in the male we found them to be two feet ten inches long, in this sex they are only about thirteen inches, and possess neither the development in breadth, nor the ocellated spots so conspicuous in the other. They are of a blackish brown, marked with small and irregular bands of ochrey yellow.

The habits of this singular bird are yet a point of much interest in Ornithology. They are said not to thrive well in a state of confinement, and we believe have never been brought alive to this country Their incubation and breeding are equally unknown.

Genus GALLUS,—*Brisson.*

Modern ornithologists have properly separated the birds generally known under the title of Cocks, from the Pheasants, with which they were formerly united, and have restored to them Brisson's more ancient title of *Gallus*. Thus restricted, they are distinguished from the pheasants, by the crown of the head being naked, and the skin being raised into a fleshy elongation, called the comb, assuming different forms in different species, and by the base of the lower mandibles having fleshy lobes or wattles, by the tail being generally carried erect, composed of two planes folded together at a sharp angle, and in the males having the centre feathers elongated, and falling gracefully over the others. The feathers of the neck, and lower part of the back and tail-coverts, assume a particular form, and are either long and hackled or truncated; in either state they are very amply supplied. They are all natives of India and her islands, frequenting the forest and jungle. They are polygamous, and very pugnacious regarding their females, proclaiming their victory and prowess with a loud and piercing voice. The plumage of the males is brilliant, of the female dull and unobtrusive, and there is often a considerable disparity in size.

It is from these birds that we are indebted for the domestic poultry of our farm-yards. Many native species are at the present time known, and we consider it very difficult to determine which is the direct origin of our reclaimed fowls. They may have reached their present state from a mixture of many, but with Temminck we are inclined to give the preference to two species, the Gallus giganteus and Bankiva, both natives of Java, on account of the domestic females bearing the greatest resemblance to those in a wild state, by the similarity of the form and structure of the feathers, and by the males of those possessing the greatest development of comb and wattles. The first of these birds may be now described:

GIGANTIC COCK.

Gallus giganteus,—TEMMINCK.

The description of M. Temminck is founded upon the notices which have been given by Dampier and Marsden, the only portion of the bird which he had seen being the leg and foot, of which he gives a plate in his Natural History of Gallinaceous Birds. There is a specimen in the Edinburgh Museum said to be wild from Sumatra, of a large size, and to which, in several particulars, the large breed of cocks in this country bear considerable resemblance, particularly in the comb, which extends backwards in a

line with the eyes, and is thick, slightly raised, and upon the top rounded, and as it were cut off. The throat is bare, and there are two wattles from the under mandibles of comparatively small size. The head, neck, and upper part of the back is covered with pale golden-reddish hackles, which spring also slightly before the bare space of the throat. The centre of the back and lesser wing-coverts are deep chestnut, the feathers with the webs disunited, the hackles covering the rump, and base of the tail pale reddish-yellow, long and bending down. Tail very ample and entirely of a glossy green. Greater wing-coverts glossy-green, secondaries and quills with outer webs pale reddish-yellow. The whole under parts deep glossy blackish green, with strong reflections, and having the base of the feathers deep chestnut, which occasionally appears and makes these parts seem mottled and interrupted. The height of this specimen from the ground is about 2 feet 2 to 2 feet 4 inches.

The cocks with ample crests upon the head, five toes ; the rumpless cock, and those of very varied colours, appear chiefly to have arisen from the various circumstances attending domestication and crossing. The most pleasing of these are specimens with a super-abundant crest and auricular feathers. The crest is composed of narrow hackled feathers, which grow erect from the head, but fall down in graceful curves, and are sometimes so long as to overhang and shadow the eyes. In many parts this breed is much culti-

vated, and is esteemed in proportion as the colours of the body and crest can be got most conspicuously contrasted, a black body with white crest, and the reverse, &c. Other fancy breeds are also frequently seen in the Dutch Pencilled Fowl, pure white spotted with black, the Siberian Fowl, having long tufts of feathers springing from the lower jaws and hanging down, and the Barbary Fowl, of a pale dun colour, and having the feathers of the neck very ample and spotted with black. A more singular anomaly occurs in those with five toes, generally called Dorking Fowls from being found and bred in most abundance in the neighbourhood of Dorking in Surry. This race is easily continued, and seems analogous either to the six-fingered or six-toed individuals of mankind, or to the dogs with the additional claws. They are much esteemed, are generally pure white, and grow to a large size; Dr Latham records one which weighed almost fourteen pounds. A still more anomalous race occurs perhaps in those without a tail, the Rumpless or Persian Cock, but we have also races analogous to them in the tailless races of dogs and cats.

There are three races of cocks, however, whose claim to actual distinction of species is not very well or satisfactorily ascertained, the G. morio, having the periosteum of the bones black, and the comb, wattles, and skin of a dull purple. It has received the name of Negro and Blackamoor Cock, but I believe is scarcely to be seen in the poultry-yards of this

country. The other two varieties are more frequently seen, and are known as the Silky Cock (G. lanatus), and the Friesland Cock (G. crispus). The first, Temminck is inclined to consider distinct. It is found in Japan and China, and is sold to Europeans as a rarity. In this country it crosses easily with the white domestic poultry, and a breed having the feathers less disunited and silky is the consequence. It is a curious fact, that the periosteum and skin of this bird are of the same dark colour with those of the G. morio, while the flesh is remarkably white. The size is rather small, the plumage of the purest white, the feathers having the webs disunited are of a silky appearance and feel, and the comb and wattles are of a laky purple. The Friesland or Crested Cock has all the feathers as it were turned the wrong way: they stand nearly at right angles with the body. The general colour of the plumage is white, but it is often seen varied like the other domestic races. It also occurs in a domesticated state in Java and Sumatra, but Temminck thinks it a distinct species, and peculiar to some parts of the Indian islands yet unexplored. We, however, think this less probable, than that the two previously mentioned are separate in their origin, as we meet with analogous variations in the hair of animals, which we know to belong to one race.

It is from a better known species that the race of Bantams appears to have sprung; the G. Bankiva of Temminck, which we have represented in the vig-

nette accompanying this volume. It will stand as the

BANKIVA COCK.

Gallus bankiva—Temminck.

(See Vignette Title-page.)

Coq et Poule Bankiva, *Temminck, Pigeons et Gallinacés*, ii. p. 86.—Gallus Bankiva, and Ayam utan or Brooga, *Transactions of Linnean Society*, xiii. p. 135. and 319.—Javan Cock, *Latham, General History*, vol. viii. p. 166.—Gallus Bankiva, *Illustrations of Ornithology*, plate 150.

Many Bantams so nearly resemble this bird, that there would be great difficulty in making a distinction. Around the eyes and the throat is bare, the comb is ample, with an irregular outline, and narrow lengthened lobes arise from the crown, and two wattles spring from the lower mandible. The head, back, and sides of the neck surrounding the bare skin upon the throat and the rump, are covered with long hackles of a clear and brilliant golden-orange. Below the hackles the upper part of the back is bluish-black, and the centre with the lesser wing-coverts are of a rich deep chestnut, the webs of the feathers quite disunited. The greater coverts are steel-blue, the secondaries of the same colour, with a broad margin of chestnut, the quills brownish-black, edged with pale reddish-yellow. The tail is black, with rich green and blue reflections, the whole under parts are black.

There is another bird, of which we have seen three or four specimens, very closely allied to this, but certainly distinct. The specimens alluded to were all from the continent of India. In size they were rather larger than what we consider the true G. bankiva. The following is a description of one of them :—

Comb large, dentated upon its frontal margin, an oval lengthened wattle at the base of each lower mandible, the cheeks, throat, base, and fore part of the neck terminating in a point bare of feathers. Crown of the head surrounding the comb yellowish-brown, changing into golden ochraceous-yellow, the colour of the exterior margin of the hackles, and most predominating. These cover the whole back and sides of the neck. Each hackle has a black centre, and is rather abruptly as it were worn off at the tip. The fore part of the neck is of a steel-blue surrounding the naked skin, the feathers rounded and solid. Under this the breast, belly, and lower part of the back is covered with hackles of a clear reddish-yellow on the outer margins, the centres of a chestnut-brown, having the same form at the tip with those of the neck, and becoming broader as they reach the lower part of the body. On the shoulders the margins of the small feathers are of a pale golden-yellow, the centres chestnut-brown, edged on each side with black. As they approach the long hanging secondaries the margins become darker, and the centres only chestnut, nearly similar to those on the breast.

On the lower part of the back, rump, and part of the tail-coverts, the hackles are broad, the centres solid deep black, glossed with green, steel-blue, and purple, none of them very lengthened or pendulous. The quills and secondaries black, glossed with steel-blue, the greater coverts chestnut on the outer webs. Belly and vent black. Tail nearly like that of the common fowl, perhaps a little more horizontal, centre feather longest, curved and bending out. The larger tail-coverts steel-blue, broad, curved, and bending outwards.

To this we refer the Gallus Turcicus of Brisson, or Cock of Turkey. The true Bantams, so called from the name of the town in Java, are distinguished by the plumed legs, a variation incident only to cultivation and domestication. A still more dwarf race is known under the title of the Gallus pumilo; this is extremely diminutive, but nearly of the same colours, and is much cultivated among cock-fanciers. There is a club in the vicinity of London who compete and give prizes to those who succeed in producing the smallest breed.

These seem to be the principal cultivated races of these useful birds. Innumerable crosses are, however, made according to the taste of fanciers, remarkable both for their beauty and deformity. The origin of them all, and the claim of some to distinction, is however still in a certain obscurity, and will probably continue so.

The cock in some of its varieties was known at a very early period, but we have no traces how it was introduced to Greece or Southern Europe. It made a figure at the public shows of the Greeks and Romans, who have preserved records of it upon their coinage, and in their mythology have dedicated it to Apollo, Mercury, Æsculapius and Mars. At the Roman banquets it was also for a while a prominent dish; the finest were fattened in the Island of Delos, whose inhabitants were proud of their success in feeding, and that island, with Rhodes, also produced the best and boldest at the public fights. Meal, milk, and darkness, were said to be the great secrets of the art;

> Pascitur et dulci facilis gallina farina,
> Pascitur et tenebris, ingeniosa gula est.
> *Mart.* xiii. 62.

and the modern art of cramming, with all its cruelties, was also perhaps resorted to; for a law was afterwards made, that no one should bring to his table more than one fowl, and that this should neither be crammed nor forcibly fattened.

In later days a certain superstition is attached to the cock and the various periods at which he crows; his crowing dispels all spirits, whether good or evil—

> Whether in sea or fire, in earth or air.

The ghost in Hamlet "faded at the crowing of the cock," and the idea has ever been a favourite one with poets and romancers, and is frequently called

to assist in getting rid of the many mysterious forms which the embellishment of their story required. During the season of the Welsh ceremony of the plygan or cock-crowing, the cock was supposed to exert this power through the night to the utmost extent, an old opinion finely described by Shakspeare:

> Some say that ever against that season comes
> Wherein our Saviour's birth is celebrated,
> The bird of dawning singeth all night long;
> And then, they say, no spirit walks abroad;
> The nights are wholesome; then no planets strike;
> No fairy takes; nor witch has power to charm,
> So hallowed and so gracious is the time.

But the most disgraceful purpose of luxury, fashionable amusement, or whatever it may be termed, to which this noble bird has been subjected, is that of cock-fighting. It is generally allowed to have been a Grecian institution, and at its commencement to have been held in the estimation of a rite entirely religious and political. By degrees its serious character became lessened, and it was practised with all its cruelties, and the zest heightened by the gambling propensities of its greatest supporters. It is supposed to have been introduced to this country in the time of the Cæsars, and became a royal pastime. In India it has also been long known, and perhaps carried to a greater extent than among any other people, whole fortunes and properties being staked, and even wives and children risked, upon the event of the contest. In England, with what was called "throwing at cocks," it formed a prominent part in

the amusements of Shrove-Tuesday, till so late as the commencement of 1700. It was permitted in the public schools as an amusement to the boys, the preceptor, in some instances, being obliged to furnish the victims, which served to lessen the expense of these institutions, by collecting a certain rent or due for each cock which was produced; and in a parish in the north of Scotland, according to the last Statistical Account, the schoolmaster's perquisites were the cock-fighting dues, equal to one quarter's payment of each scholar.

Throwing at cocks is perhaps less known. The following description is given by Brand, in his interesting popular antiquities:—"The owner of the cock trains his bird for some time before Shrove-Tuesday, and throws a stick at him himself, in order to prepare him for the fatal day, by accustoming him to watch the threatened danger, and, by springing aside, to avoid the fatal blow. He holds the poor victim on the spot marked out by a cord fixed to his leg, at a distance of nine or ten yards, so as to be out of the way of the stick himself. Another spot is marked, at the distance of twenty-two yards, for the person who throws to stand upon. He has three *shys* or throws for twopence, and wins the cock if he can knock him down, and run up and catch him before the bird recovers his legs. In 1680 this custom was sanctioned in the environs of London, and the proceeds applied to the poor-rates."

A hen was also sometimes made use of in another

noisy and ridiculous pastime of this period—"Threshing the Hen."

> At Shrovetide to shroving go thresh the fat hen,
> If blindfold can kill him, then give it thy men.
> *Tusser.*

"The Hen," says Brand, "was hung at a fellow's back, who has also some horse bells about him; the rest of the fellows are blinded, and have boughs in their hands, with which they chase this fellow with his hen about some large court or small enclosure, the fellow with his hen and bells shifting as well as he can, they follow the sound, and sometimes hit him and his hen; at other times, if he can get behind one of them, they thrash one another right favourably. When the hen was killed, it was boiled with bacon, and store of pancakes and fritters are made."

For economical purposes there is no bird used to the same extent. Among all nations it is most extensively reared, and we believe is one of the only instances where artificial means have been attempted with success. The Egyptians have practised this manner of rearing poultry with the greatest nicety, and in the edifices heated by flues, and constructed for this purpose only, from 40,000 to 50,000 chickens could be hatched at once. This was attempted to be introduced into various parts of Europe by Reaumur, but with only partial success, and within these few years an establishment to a considerable extent was tried in London. The temperature of

modern Europe is, however, too variable, and the greatest delicacy in the management of the heat is necessary.

Among the birds belonging to this group not so generally known, and remarkable for the beauty of their plumage, we may first mention

PLATE IX

GALLUS ŒNEUS.
[The Bronzed Cock]

Native of Sumatra.

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THE BRONZED COCK.

Gallus æneus—CUVIER.

PLATE IX.

Coq bronzé; Gallus æneus, *Temminck, Planches Coloriées*, p. 374. Male.

THIS beautiful bird seems first to have been figured in the Planches Coloriées from a single specimen sent from the interior of Sumatra by M. Diard. It is rather larger than the Bankiva cock. The comb is very large, and with an unbroken edge. The cheeks and throat are bare, and from the base of each lower mandible there is a small thick wattle; the whole of these parts are bright red. The feathers of the head, neck, and upper part of the back, are slightly lengthened, but do not take the usual long hackle shape, and are of a metallic green, with brilliant reflections. The plumes are of deep and rich purple, and are edged with a broad border of pale lake. The tail is also purple, with bright metallic green reflections. The throat, breast, and the whole under parts, are of a deep black, shaded with purple, and in some lights with a greenish tinge.

Our next Plate represents

THE FORK-TAILED COCK.

Gallus furcatus.—Temminck.

PLATE X.

Coq ayam-alas; Gallus furcatus, *Temminck, Histoire Naturelle des Gallinacés*, ii. p. 261.—*Pl. Coloriées*, pl. 483.—Gallus Javonicus, *Horsfield.*

This curious Cock was first described by M. Temminck in 1813. It is nearly two feet in length to the extremity of the tail. The cheeks are bare, the head furnished with a simple entire comb, and the throat with a single large wattle springing from the centre: they are all bright red. The head, neck, and upper part of the back, are remarkable, from the short and rounded form of the feathers: the centre of these feathers is of a deep metallic blue, which shades towards the edges to a golden-green, and at the extremities they are finished with a narrow band of very deep black. The feathers of the lower part of the back and tail-coverts lengthened as usual, are of a deep black in the centre, and are bordered with a narrow stripe of pale yellow: those forming the wing-coverts are of the same form, but the pale narrow border is of a rich orange-red: the whole under parts are deep black. The tail is said to be carried more in a line with the body than usual, and

GALLUS FURCATUS
(The Fork-Tailed Cock)

Native of Java.

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to have a slightly forked form: the large hanging feathers are of a rich metallic green, tinged with steel-blue. The bill, legs, and feet, are yellow.

The hen has a circle round the eyes only, naked and of a livid tint: the head and back part of the neck are brown, and above each eye there is a reddish streak: the back and wing-coverts are of a dull green, with golden reflections, each feather having a greyish-brown margin: the greater coverts and secondaries are black, with greenish reflections, waved transversely with yellowish-brown, and having the tips entirely of that colour; the tail and wings brown, the feathers of the former edged with pale reddish, the whole of the under parts are grey, the tips of the feathers on the breast tipped with a deeper tint; the feet and legs are brown.

This bird is said to be very abundant in Java, and may be often seen during the day upon the edges of the woods and jungles, but possesses the same wary disposition of its congeners and the pheasants, and upon the least alarm runs for cover. Temminck observes that they are not kept in a domestic state, but that they occasionally breed with the tame hens—a curious fact, and showing the uncertainty with which the true origin is clouded. The cry may be expressed, he says, by the syllables *co-crek*.

The last that we shall here notice, is still more remarkable in the form of the neck and back feathers, which are completely separated in their form and colour from all the others. It is

SONNERAT'S WILD COCK.

Gallus Sonneratii.—Temminck.

PLATE XI. Male.—XII. Female.

Coq sauvage, *Sonnerat's India*, ii. pls. 94. & 95.—Phasianus Gallus, *Lath. Index Ornithologicus.*—Coq et Poule Sonnerat, *Temminck, Pigeons et Gallinacées*, ii. p. 246.—*Planches Coloriées*, pls. 232, 233.—Sonnerat's Wild Cock, *Latham's General History*, vol. viii. p. 181.

Sonnerat's Cock has been dedicated by M. Temminck to its discoverer. The first notice we find of it which can be trusted, is in the Voyage to India by that traveller, under the title of Wild Cock, and asserting it as the probable stock from which all our domestic races have arisen. The very great difference of the structure of the plumage, however, renders this most improbable; and none of the domesticated races in India bear the least resemblance to it. It is a native of the continent of India, inhabiting the higher wooded districts, particularly Indostan, where, among English sportsmen, it receives the name of Jungle Fowl; and specimens of it, next to the Bankiva cock, are much the most frequent in collections in this country. In size, it is nearly equal to an ordinary domestic fowl, the proportions

GALLUS SONNERATI
(Sonnerat's Wild Cock)
Native of India

GALLUS SONNERATI
FEMALE.
Native of India.

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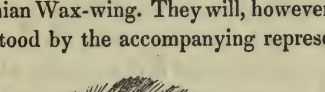
rather more slender and graceful: the comb is large and with an unequal margin; and double wattles hang from the base of the under mandibles. But the most singular part in the plumage is in the form of the shaft in all the long hackled feathers: those of the neck, wing and tail coverts have a dark greyish ground, but the shafts are of a bright golden orange, and in the centre and at the tip dilate into a flat horny plate, similar to what is seen in the wings and tail of the Bohemian Wax-wing. They will, however, be better understood by the accompanying representations



of their form. Their appearance is both singular and beautiful. The centre of the back, the throat, breast, belly, and thighs, are of a deep and rich grey, having the shafts and edges of a paler tint. The tail is of a rich and deep green: the feathers which immediately succeed the long hackles of a rich purple, edged with a pale yellow, and those immediately succeeding of a golden-green, edged with grey, the

whole with very brilliant metallic reflections. The bill, legs, and feet, are yellow.

The hen is about a third less than the cock, without comb or wattles. The plumage has no trace of the horny structure adorning the other sex. The upper parts of it are of a uniform brown: the feathers on the neck edged with a dark margin, upon the back and wing-coverts with a pale streak along the shaft, and on the wings, tail coverts and tail, waved and mottled with darker markings. The throat and fore part of the neck is white, and on the rest of the lower parts each feather is of a greyish-white, edged with dark brown; towards the vent the brown predominates. The legs and feet are bluish-grey.

Dr Latham observes that this species is by far the boldest and strongest in proportion to its size, and in Indostan is anxiously sought after by the cock-fighters, seldom failing to secure the victory over the larger game cocks.

We shall now proceed to the Pheasants, forming the

PHASIANUS TORQUATUS
(The Ring-Necked Pheasant)

Native of Britain &c.

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Genus PHASIANUS, *Auctorum.*

THE RING-NECKED PHEASANT.

Phasianus torquatus.—Temminck.

PLATE XIII.

Faisan à collier; Phasianus torquatus, ***Temminck, Pigeons et Gallinacées,*** ii. p. 327.

With this bird we enter the genus *Phasianus*, as it is now restricted by modern ornithologists. Formerly the birds which we have just left were included in it, and another group which we shall reach after having described a few of the more interesting and typical forms of that now before us.

The Pheasants may generally be characterized by having the bill rather strong, the upper mandible convex, and naked at the base: the nostrils are lateral, and covered with a cartilaginous scale. The head is clothed with feathers, but the region of the eyes, for a considerable space, is covered with a naked verrucose skin, generally of a bright vermilion. The wings are short, but firm and compact. The tail is remarkably long, generally wedge-shaped. The feet have the anterior toes united by a mem-

brane to the first joint. The hind toe is articulated upon the tarsus, which, in the males, is furnished with a strong conical sharp spur. The plumage of the male is generally of the most brilliant tints. In their habits, the Pheasants exhibit all the characters of the rasorial birds: they live on fruits and roots, and the larger seeds, are remarkably active upon the ground; and though their short and concave wings prevent them from taking a long and sustained flight, their power is sufficient to carry them away from ordinary dangers; while in the form of the tail and rump feathers, or upper tail-coverts, we find the same fulness which we have seen to be so extraordinarily developed in the peacock, turkey, and cocks.

For our first illustration, and as typical of this group, we have selected the Common Pheasant, familiar to every one, and universally admired, for the richness and beauty of his plumage. It is now generally admitted that the Pheasant was originally introduced into Europe from the banks of the Phasis *, a river in Chalchis in Asia Minor. The Greeks, in the ascent of the stream, were attracted by their beauty; and the bird being so easily domesticated, a valuable addition to the luxury of themselves and the Romans was soon secured, and rapidly extended itself over the southern countries of Europe. They appeared at the expensive and superabundant repasts of the ancients, and for a time bore the palm for no-

* Now the Rioni.

velty; and Heliogobalus in his ostentation is said to have fed the lions of his menagerie with them. The Pheasant may be said to have been originally restricted to the Asiatic continent, extending over the greater part of it, and reaching to China and the confines of Tartary. Now, however, it is much more extended, and its facility of domestication, and hardy constitution, suit it for almost every country. It is even abundant in Siberia, where the inhabitants adorn their caps with its plume; and one of the Governors of St Helena succeeded in almost naturalizing it to the more barren soil of that island. In the greater part of Europe it is completely naturalized; and we have heard of its introduction to North America, where it will certainly thrive. We are not aware of any similar attempt having been made in either Africa or New Holland. In the latter we should have little doubt of its success; but the climate of Africa we should consider as one of the most unpropitious for its establishment. We are in greater uncertainty of the time of its introduction into Great Britain than of its original discovery. They are mentioned in Echard's History of England as worth only 4d. in 1299. Two hundred made part of the great feast of Archbishop Neville, about the middle of 1400; and in the regulations of the fifth Earl of Northumberland, begun in 1512, we find their value increased to 16½d. each. Upon the Scottish border and high Cheviot range

they must have been early abundant; for in the old ballad of the Field of Otterbourne, we have

> The roo full rekeles there sche rinnes,
> To make the game and glee;
> The Fawkon and the *Fesaunt* both,
> Among the haltes on hee.

The markings and varying and splendid hues of the plumage of the male Pheasant are so well known and have been so often celebrated, that any detailed description will be unnecessary. Pope's poetical description is extensively known: that of another, perhaps less frequently quoted, will give some idea of his splendid appearance:

> Splendid his form, his eyes of flaming gold
> Two fiery rings of living scarlet hold;
> His arching neck a varying beauty shows,
> Now rich with azure, now with emerald glows;
> His swelling breast with glossy purple shines,
> Chestnut his back, and waved with ebon lines,
> To his broad wings gay hues their radiance lend,
> His mail-clad legs two knightly spurs defend.

In this country we have, however, Pheasants which exhibit a marked difference in the want or presence of the pure and conspicuous white ring which encircles the neck. These, by sportsmen, and many ornithologists, have been considered as varieties only; while Temminck, who compared native specimens of each, thinks them completely distinct. Out of India they breed freely together, and it is im-

possible to decide the question from any series which could be procured from the preserves of this country; and we possess Indian specimens of the ringed bird only. We shall therefore mention the reasons for separating them which the above-mentioned naturalist has pointed out, stating, at the same time, that we consider his opinion to be correct, and that the differences evidently appear more marked than in many allied birds which have universally been acknowledged distinct.

The ringed pheasant chiefly inhabits the forests of China, where the common species is also abundant, but in this natural state they never breed together. The eggs of the ringed bird also differ: they are of a pale bluish-green, marked with small blotches of a deeper tint; while those of the common pheasant are of an olive white *, and without any spots. The ringed pheasant in its wild state, is always of a lesser size, the extreme length never exceeding two feet five inches, and the tail itself is much shorter in proportion to the body. The head is of a whitish fawn colour, tinted with bluish-green; and above each eye there are two white lines, forming a sort of eyebrow. The markings on the back are different and smaller, and the rump feathers shew the same peculiar tint which the mixture of fawn and greenish-blue exhibits; and, lastly, the white ring broadest upon the sides of the neck, is a mark which never can be mis-

* This may be seen in any part where the two breeds exist together.

taken. The female also differs in her lesser size, and comparative length of the tail. The ground colour of the plumage is brown. There are no dark spots upon the breast, and the barring of the tail is very distinctly marked; but what Temminck has observed to be the principal distinction in the female, is a little band of thick and black feathers, which runs a short way under each eye, and which he thinks is wanting in the other.

The common pheasant does not much differ in its markings from those of the mixed breed we are accustomed to see, except in the entire want of the ring, and the peculiar tint upon the head and rump, but it is longer by five or six inches than the other, extending to three feet.

Of the habits of these birds in a natural state, we know little in reality, but have no reason to doubt their similarity to those exhibited in our own country; and the deep matted jungles of India, particularly where water abounds, must be their favourite resort. In their naturalized state, woods with a thick undergrowth of brush, brambles, long grass, &c. and interspersed with open glades, which some little stream refreshes, and the sun enlivens, are their delight during the day, and whence they run morning and evening to the open skirts, where some favourite food abounds. It is in their way to such feeding ground, that they are so easily secured by unqualified persons, for, never taking flight unless disturbed, they run and thread their way through these

tangled brakes, and leave passages which are easily distinguished by the practised eye of the poacher.

During the winter months the pheasant goes regularly to roost, and the abundance of a preserve may easily be ascertained about twilight, by the noise which the males make in flying up to their perch. During summer, however, and when moulting, they do not tree, but squat among the long grass and cover, offering themselves in this way an easy prey to another class of enemies, polecats, foxes, &c. When pheasants are numerous, Mr Selby observes, "the males are in general found associated during the winter, and separate from the females; and it is not until the end of March that they allow the approach of the latter without exhibiting signs of displeasure, or at least of indifference. At the above mentioned time, the male assumes an altered appearance; the scarlet of his cheeks, and around his eyes, acquires additional depth of colour, and he walks with a more measured step, with his wings let down, and with his tail carried in a more erect position. Being polygamous, he now takes possession of a certain *beat*, from whence he drives every male intruder, and commences his crowing, attended with a peculiar clapping of the wings, which answers as the note of invitation to the other sex, as well as of defiance to his own."

During summer, the favourite food of the pheasants are tender shoots of the potato and other plants, and insects with their larvæ; as the autumn advances, the ripening grains of all kinds are

abundant, and the ample store of wild fruits and berries which nature has every where provided, render this their time of feasting. As winter approaches, they are reduced to less various fare, and resort to the fallows in search of roots, and to the turnip fields; and Mr Selby has remarked, that the roots of the bulbous crowfoot (*Ranunculus bulbosus*), and of the garden tulip, are both much sought after. The latter they omit no opportunity of obtaining, and which, by means of the bill and feet, they are almost certain to reach, however deep it may be buried. In extensive preserves, during this season, they are always regularly fed, and know the feeding hour and call of the keeper correctly, and by this means they are prevented from straying. The most successful and favourite food at these times is peas or grain. In the south of England, the breeding of pheasants for the supply of preserves, is carried on to a great extent, and on this account the bird can almost never be seen except in an artificial state; for being turned out of the nursing-houses early in the season, and fed and nursed in the covers for the winter's batteau, they are sluggish and lazy, quite fearless, and can afford any thing but sport to one accustomed to follow game in their wild and natural haunts. The slaughter at these shooting meetings is sometimes so immense, that the game can scarcely be made use of, and they were formerly much more wanton on the Continent than in England.

In perhaps the largest game establishment of

modern days, and conducted in a most magnificent scale, that of Chantilli, 54,878 head of various game were killed in one year; and during a period of thirty-two years, 12,304 is the lowest number that was obtained. In the same course of years the number of pheasants killed was 86,193, averaging nearly 2700 yearly. In Germany, there were some parties scarcely inferior in massacre. A party of ten in Bohemia are said to have killed in two days, within a limited extent, above 950 pheasants, besides about 1200 partridges; and in another part of Germany, twelve sportsmen, if such a name is applicable to them, killed in one day of fourteen hours, 39,000 head of game, of which pheasants bore a proportion. At the Christmas batteau in England, 800 to 1000 head of game is a frequent daily amount, the greater share of which are hares and pheasants. From these some idea may be formed of the extent to which breeding and turning out is carried.

The pheasant is subject to considerable variety of plumage. Like most of the gallinaceous birds, as we have already mentioned, the female assumes the plumage of the male, and those in this state should be killed or expelled the preserves, as with the livery, they assume a disposition at war with their own race. They vary in being mottled with white, or becoming entirely of that colour; and Temminck is of opinion that in such cases the change is owing to disease in some of their functions, and mentions that persons who have long had the charge of a pheasantry, have

known the white birds resume all their former brilliancy of plumage, after continuing for years in the albino state. There is another very beautiful variety which of late years has become extremely common in Scotland, and has received the appellation of Bohemian Pheasant. The ground shade of the plumage becomes of a rich green cream colour, but the head retains its glossy tint, and the black tips and markings on the breast and belly, and back, appear even more conspicuous than in the ordinary state. This state may occur from a modification of the same causes which influence the change in the white varieties.

The pheasant sometimes also crosses with the domestic fowl. Temminck mentions this as requiring great attention to accomplish; but where poultry is kept upon the borders of a wood abounding with pheasants, it occasionally happens, and would do so perhaps more frequently, if favourable opportunities occurred; a specimen in our own possession, exhibiting all the mixed characters, was procured in a wild state. M. Temminck also records a solitary instance of a mule between the female common pheasant and male golden pheasant, which exhibited a curious but splendid mixture; all his endeavours, however, to procure a second specimen were ineffectual. The common pheasant breeds also freely with the ringed bird, and the offspring is productive. This has been considered by many as a proof that these two birds were identical, but in the whole of this order,

and its corresponding one among quadrupeds, this law has a much more extended modification, and can scarcely be taken as a criterion except in very opposite instances.

We shall now examine another very beautiful pheasant, very much allied in form to that we have now been describing. It is

DIARD'S PHEASANT.

Phasianus versicolor.—VIEILLOT.

PLATE XIV. MALE.—XV. FEMALE.

Le Faisan versicolor, Phasianus versicolor, *Vieillot, Gallerie des Oiseaux*, pl. 205.—*Temminck, Planches Coloriées*, Male, pl. 486. Female, pl. 493.

THIS beautiful pheasant was first noticed by M. Diard, who procured a specimen which had been imported to Batavia, and is first figured and described by M. Vieillot in his Gallery, and since by M. Temminck, who has also added the portrait of the female, both of which have been used for the accompanying illustrations. It is a native of Japan, frequenting the woods, according to Seiboldt, and possessing the manners and habits of the common bird.

Diard's pheasant is nearly of the size and form of the common naturalised breed, but the tail is somewhat shorter in proportion. The naked space of the cheeks is bright scarlet. The head and upper part of the neck are of a golden green, with violet reflections; the throat and fore part of the neck of a lively blue; lower part of the neck, breast, and upper parts of the body, of a deep green, with a

PHASIANUS VERSICOLOR.
(Beards Pheasant)
Native of Japan.

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PHASIANUS VERSICOLOR.—Female

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shining lustre. The feathers of the back and scapulars have small yellowish white bands upon a ground of rich metallic green, glossed with purple and violet, and surrounded with a border of golden yellow. The lower part of the back and rump are grey, clouded with green. The tail coverts blue or green, according as the light falls upon them. The feathers of the tail are of a greyish green, the lateral ones thickly mottled with very small spots; the four centre ones crossed with bars, largest and broadest towards the base. The edges of these feathers are long and disunited, and have on each side one of a greyish purple, almost like a fringe. The feet and legs are reddish. The total length of the bird is about three feet seven or eight inches.

The female, Plate XV., about sixteen or seventeen inches in length, M. Temminck observes, so closely resembles the common hen pheasant, as scarcely to be distinguished from her, except by the less size, and the proportional length of the tail. The upper parts, however, have generally a greener tint, and are of a metallic lustre, and the lower parts have a much greater number of black spots and markings. We have given a representation of the female of this bird, with the view of exhibiting the differences of sex among the pheasants; among all, even the most splendid, the plumage is of a shade of yellowish brown; the feathers, to a certain extent, following the form of those of the male, and generally barred with black about the tips.

THE BARRED-TAILED PHEASANT.

Phasianus superbus,—LATHAM.

PLATE XVI.

Barred-tailed Pheasant, *Latham's General History*, vol. viii. p. 196.—Phasianus superbus, Faisan superbe, *Temminck, Pigeons et Gallinacés*, ii. 336.—Faisan venere, Phasianus veneratus, *Temminck, Planches Coloriées*, pl. 485.

FROM Temminck's own shewing, this is the Phasianus superbus of his former work, and of Latham's General History. Why he changes the name to that of veneratus, which was engraved on the accompanying plate, before enquiring into the matter, we do not know; and seeing no reason for it, we have now retained the original one, already introduced into many works of natural history.

Dr Latham's original description of this very splendid bird, was taken from one of the drawings of Sir J. Anstruther; from the writing beneath it in the Persian language, it was called Doom-durour, (long-tail), and was found on the snowy mountains of Surinagur. Temminck's first description, amounted only to that of two of the tail feathers, but having since procured two entire specimens, he has been en-

PHASIANUS VENERA
The Barred-tailed Pheas

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abled to give a figure and more detailed account; the former has now served for the accompanying illustration. It appears to be extremely rare in China, and to be brought from the confines of the empire to Pekin, where it is kept in the menageries of the most wealthy. Temminck is also of opinion that their exportation is prohibited under a severe penalty. The most remarkable feature in this bird is the extraordinary and disproportional length of the tail. Temminck gives the length of the longest feather as above four feet, while Dr Latham remarks, "Some years since, I had an opportunity of seeing a bundle of thirty or forty of these tail feathers, which were brought from China: I found among them every length from more than seven feet to eighteen inches." The body of the bird is about the size of the Silver Pheasant of our Plate XVIII. A small portion round the eye is bare of feathers, and is red. The head is covered with a cowl of white, surrounded by a narrow band of black, broadest towards the ears. Two white collars cover the neck, and are broadest on the fore part; the first stretches from the base of the bill upon the throat, the second spreads upon the breast. The back of the neck, back, and rump, are covered with feathers, in the form of scales, of a rich and brilliant golden-yellow, and terminated at the extremity by a narrow band of black; the plumes of the breast and lower parts are of a shining white, covered by two irregular bands of deep black, and tipped with a band of

the same colour; the middle of the belly, breast, thighs, and under tail-coverts, deep black; the latter spotted with golden yellow. The tail is composed of eighteen feathers, which fold over each other, and when closed appear very narrow; at the base they are about two inches in breadth, of a greyish white, clouded with a golden red upon the edges, and crossed on each side of the shaft with alternate crescent-shaped bars, brown at the shaft, and chestnut-coloured at the edge. Temminck counted upon the feathers of his specimen above four feet in length, forty-seven of these bands. The feet and legs are greyish brown, and are armed with spurs, like the greater number of the genus.

PHASIANUS SŒMMERRINGII

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SŒMMERING'S PHEASANT.

Phasianus Sœmmeringii,—Temminck.

PLATE XVII.

Faisan Sœmmering, Phasianus Sœmmeringii, *Temminck, Planches Coloriées*, pls. 487 and 488.

This very beautiful species was sent to the Dutch collections by Dr Seiboldt from Japan, and is dedicated to the venerable Sœmmering by M. Temminck, by whose description and figure it is only known.

That naturalist describes it as intermediate in size between the common and golden pheasants, or about 3 feet 6 inches long. The plumage of the male is generally of a rich reddish-purple, with a shining or bronzy lustre, the feathers bordered with a band of still more brilliant appearance. Upon the under parts and wings, the colour becomes of a redder tint, with purple reflections, and mixed with large black spots. The tail is long and very ample, clouded with darker shades, and crossed with thirteen large black bands.

The female is much smaller, being about nineteen inches long. The tail only about six inches in length, perfectly wedge-shaped, is of a lively red; the feathers

except those in the centre, banded towards the tip with black; the tip itself of the whole is white. The rest of the plumage is varied with black and reddish-brown; the markings arranged in bars or crescents, a good deal similar to that of the common grey hen.

We have here to notice another very interesting bird, of which Mr Gould has given a figure in his Century of Birds from the Himalayan mountains, under the title of Phasianus Staceii. The head is adorned with a considerable crest, and, with the neck, is of a dull tawny yellow, every feather, except on the cheeks and throat, being barred with black. The quill feathers are marked with zigzag lines, and are tipped with black; the rump is rich red brown, each feather having two spots of black near the tip; the tail is pale tawny, barred at regular distances with a narrow and broad band of deep blackish-brown; the under surface is pale tawny, barred on the back; the bill and tarsi brown. The total length is about three feet four inches.

Our next bird differs from the true or typical pheasants, in being also crested, and in having the tail in a manner folded, bending and very ample. By Temminck it is placed first among the pheasants, after the Macartney Cock, with which he concludes his genus *Gallus*; it is

PHASIANUS NYCTHEMERUS

[The Silver Pheasant]

Native of China

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THE SILVER PHEASANT.

Phasianus nycthemerus,—Linnæus.

PLATE XVIII.

Phasianus nycthemerus, *Linnæus*, *Latham*.—Black and White Pheasant, *Edwards*.—Pencilled Pheasant, *Latham*.—Faisan bicolor, *Temminck*, *Pigeons et Gallinacés*, ii. p. 281

This is one of the most powerful of the pheasants, and is a match in battle for a game cock. The naked space round the eyes is very large, and extends forward upon the nostrils, rising above each in the form of a small caruncle, and at the lower part falling down in a small wattle. This part is of a soft velvety texture, and of a bright vermilion tint. The head is adorned with a long and ample crest of glossy purplish black feathers; the throat and whole under parts of the same deep tint; the feathers covering those parts are of a lanceolate form, similar to those upon the same parts of the next genus we shall describe. The rest of the plumage may be said to be pure white, but the webs of each feather, from the upper part of the back downwards, are diagonally streaked with black,

producing a beautiful wavy pencilled appearance. The tail is folded; the centre feathers without the black waves and bending; the others graduating to the outside, and broadly marked with black; the legs and feet are purple-lake.

The female is smaller, the crest much less ample, and the tail more regularly graduated to the end; the centre feathers brown, the outer ones obliquely streaked with black and white; the upper parts are of a chaste greyish brown, with minute black irregular bars. The under parts are white, irregularly marked with brown, and crossed with black bars.

The Silver Pheasant is a native of the northern parts of China, where it is frequently kept in a tame state. It has often been imported alive to this country, with the next it forms a very beautiful ornament to our aviaries, and, being perfectly hardy, it is reared with the greatest ease. Some attempts have been made to turn it out in the preserves, but generally without much success. They are with great difficulty raised from the ground, and may fall a frequent prey to all kinds of carnivorous animals; they also drive off the common pheasant, and the sacrifice in many instances has been thought too great. When in confinement they become extremely tame and familiar.

PHASIANUS PICTUS.

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THE GOLDEN PHEASANT.

Phasianus pictus.—Linnæus.

Plate XVIII.

Phasianus pictus, *Linnæus*, *Latham.*—Painted or Gold Pheasant, *Edwards.*—Faisan tricolor, *Temminck*, *Pigeons et Gallinacés*, ii. p. 341.

In this bird we see another form among the true pheasants. The head is crested, and even more amply than the last; the tail is broad, folded, and bending, and the neck is adorned with a ruff of broad truncated feathers, which fall from the occiput around like a hood, and can be raised and depressed at the will of the bird. This form is only exhibited by the present bird, and another described by Mr Leadbeater, under the title of Ph. Amherstia.

This pheasant may be said to be the most gaudy of its race, and for its gay and splendid plumage and comparative hardiness, is often kept and sought after for the aviary, and is so generally known, that a detailed description is unnecessary, particularly where words are so inadequate to convey an idea of the brightness of the plumage. In addition to the brilliant ruff of golden orange and black, differing from

the plumage of the pheasants, we have the feathers covering the rump, particularly upon the sides, long, narrow, with loose webs, almost like hackles, but of a texture quite stiff and almost horny. The female has the usual unobtrusive brownish plumage, broken with black crescent-formed bars, and the tail is short and regularly graduated.

This bird is also a native of China, where it is called *Kinki* or *Kinkee*, Gold Flower-fowl, or Wroght Fowl.* It is kept in domestication, and may now be procured in considerable numbers from many parts in the south of England. Like the Silver Pheasant, they have also been attempted to be set at large in the preserves, but generally also without success. For the table they are said to be more delicate than the common pheasant; their numbers are, however, too limited for them to be often seen in a cooked state. The feathers of the crest and ruff are held in much request by anglers, and particularly to assist in dressing the gaudy Irish hooks.

The other beautiful species now alluded to is

LADY AMHERST'S PHEASANT.

Phasianus Amherstia.—LEADBEATER.

First described by Mr Leadbeater of London, in the Transactions of the Linnean Society, from two

* Latham, General History.

male specimens presented by the King of Ava to Sir J. Campbell, who gave it to Lady Amherst.

" The feathers on the top of the head are green; the crest-feathers are crimson, and $2\frac{1}{4}$ inches in length; the pendant tippet is of a beautiful white, each feather tipped with a dark green circular band, with a straight band of the same colour across each feather, about three-eighths of an inch above the end; the whole depth of this tippet is $5\frac{1}{4}$ inches, the longest feathers $4\frac{1}{4}$ inches; the neck, back, shoulders, chest, and wing-coverts are of a beautiful metallic green, each feather ending in a broad zone of velvet black; the wing primaries dusky, with lighter coloured shafts, and white outer edges; the greater wing-coverts and secondaries bluish-black; the breast and belly white; thighs and under-tail-coverts mottled dark brown and white; the legs light blue. The feathers on the rump are brown at the base, green in the middle, the remaining most exposed portion of a bright saffron-yellow; the tail-coverts are also brown at the base, the centre portion barred green and white, ending in scarlet; these feathers elongated to the extent of 10 inches, as their plan of insertion approaches that of the true tail primaries; the first tail primary measures only 29 inches, the plume $1\frac{1}{4}$ inch in depth, of a beautiful white ground, with broad bars of green about three-fourths of an inch apart, extending in the direction of the web, and mottled across from bar to bar; the third and fourth primaries are the longest, and measure 38 inches

each ; the inner web narrow and mottled black and white ; the outer web $1\frac{3}{8}$ inch wide, with transverse circular dark green bars about three-fourths of an inch apart, on a ground the inner portion of which is greyish-white, the outer part light chestnut-brown.

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Genus EUPLOCOMUS,—*Temminck.*

This genus was formed by M. Temminck, for the reception of a few birds differing in form and structure from the cocks and pheasants, but still appearing closely allied to both; while its alliance to Lophophorus is also so great, that the founder of that genus has transferred one described by himself to the present little group. The form of the tail is one of the principal distinctions, being often forked, in all cases very ample; the feathers broad, and pointed. The first we shall notice is

THE MACARTNEY COCK.

Euplocomus ignitus.

PLATE XIX. Male. XX. Female.

Fire-backed Pheasant of Java, *Macartney, Embassy to China*, pl. xiii.—Phasianus ignitus, *Lath. Index Ornithologicus.*—Houpifére Macartney.—Gallus Macartneyi, *Temminck, Pigeons et Gallinacés*, ii. p. 273.

The first notice of this very beautiful bird is in the description of the embassy to China, under Lord Macartney. It was met with by Sir George Staunton in a menagerie at Batavia, and figured in the large Atlas of Plates accompanying the above mentioned work. Temminck subsequently gave a description of it in his Gallinaceous Birds, made from many specimens received from Sumatra.

The length of the adult male is about 2 feet. The skin of the nostrils stretches backwards, and covers the sides of the head behind the eyes, and is of a bluish-purple. Upon the centre of the crown there is an upright crest, composed of feathers with a naked shaft, and expanding at the tip into a number of slender barbs, which spread out and form a broadish crown. The head, neck, breast, belly, and upper part of the back, are of a very deep black,

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EUPLOCOMUS IGNITUS

(The Macartney Cock)

Native of China.

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EUPLOCOMUS IGNITUS.

Female

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with steel-blue reflections. The feathers on the middle of the back are of a brilliant orange, or what would be called flame-colour, and in different lights assume various degrees of intensity of lustre. The rump and tail-coverts are broad and truncated, and are of a brilliant bluish-green, with a bar at the tip of a paler tint, and in those at the sides of the same colour with the orange of the centre of the back. The tail is slightly folded, like that of a hen, or, when seen flat, appears forked. The centre-feathers are white ; those on the out-side black, with green reflections. The legs and feet are bright vermilion.

The female, Plate XX., only about 20 inches in length, has the plumage almost entirely of a rich cinnamon-brown. On the upper parts the feathers are slightly mottled with black. The throat is white ; and the lower parts, of a paler tint than those above, have the feathers bordered with nearly pure white. The head wants the erect crest of the male ; but the feathers on the hind-head are lengthened. The tail appears slightly forked.

The Macartney Cock inhabits Sumatra ; but nothing has yet been learnt regarding its habits.

PUCRAS PHEASANT.

Euplocomus pucrasia.

PLATE XXI.

Phasianus pucrasia, Pucras Pheasant, *Gould's Century*, and *Gray's Illustrations of Indian Zoology.*

This is one of the most beautiful of the Euplocomi, but differs slightly from the typical examples in the form of the tail, which is more pheasant-like. There seems to be considerable variations in the shades of the plumage of this bird. The most frequent tints are upon the head, throat, and neck, of a beautiful green, with blue and violet reflections. Upon the sides of the neck there is a conspicuous patch of pure white. The head is crested with long, rather broad feathers, the first and shortest arising from the crown, of a reddish-yellow; the others hanging over the back of the neck, of the same rich colour with the head and neck. The upper parts are of a rich brown; the feathers of a lanceolate form, and dark centres. The under parts are of a rich chestnut, and bordering this are lanceolate plumes, of a still greater length, nearly white; the centres dark, tinged with yellow, and appearing conspicuous when lying over the darker plumage of the upper parts.

EUPLOCOMUS PURCHRASIA

Puoras Pheasant

Native of India.

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The tail is ample, and above of a brownish-chestnut. The female is very similar to those of Lophophorus and Tragopan, of a dull umber-brown, with dark waves and crosses. This bird inhabits the alpine regions of India, and is yet but imperfectly known.

To this same genus belong one or two beautiful birds even still less known than that now represented. Among them is the Lophophorus Cuvierii of Temminck. The plumage of this is black, barred delicately with grey; the rump with large truncated feathers, broadly edged with white. Temminck is of opinion, that his specimen, unique at the time, was scarcely adult, and that the plumage, with the exception of the rump, was glossy bluish-black. A bird which we lately received from India agrees with this, and is entirely of a rich bluish-black, except the rump.

Another beautiful species, inhabiting Alpine India, has been figured by Mr Gould under the name of Phasianus albocristatus. In this the crest is composed of long hackly white feathers. The plumes upon the lower parts are very lanceolate in their form, and are conspicuously seen on the black shoulders and mantle. The rump-feathers are of the same broad form, with broad white margins.

The next form we have to notice is

Genus LOPHOPHORUS,—*Temminck.*

Temminck instituted this genus in the Histoire Naturelle des Pigeons et Gallinacés, from what yet remains nearly a solitary species, the Impeyan Pheasant of Latham. At the time of its formation, he placed several other birds with it; but he is now of opinion himself, that they will more properly range with the preceding genus Euplocomus. The only bird which has any claim to be reserved is what was described in "Ornithological Illustrations" as Lophophorus Nigelli; but being a female, we cannot so clearly decide. This genus differs from Euplocomus in the form of the tail, which is flat and rounded; the nearest approach to that being in the Ph. erythropthalmus of Raffles, and in the old Loph. Cuvierii of Temminck. The form of the bill is also much more hooked or curved downwards, as if intended to dig or root up bulbous plants, in the same way with some tribes of the partridges. The head is also splendidly and peculiarly crested, and the plumage extremely brilliant.

Our next Plates will represent the male and female of this splendid bird; and we have to acknowledge our obligation to Mr Gould for permission to

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LOPHOPHORUS IMPEYANUS.

{ Impeyan Lophophorus }

Native of Nepaul.

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LOPHOPHORUS IMPEYANUS
Female
Native of Nepaul
Lizars Sc

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copy his beautiful Plates in the Century of Himalayan Birds, by far the best which have ever appeared of this, and some other members of this beautiful family.

IMPEYAN LOPHOPHORUS

Lophophorus Impeyanus.

PLATE XXII, MALE.—XXIII, FEMALE.

Lophore resplendisant, *Temminck, Pigeons et Gallinacés*, ii. p. 355.—Impeyan Pheasant, *Latham's General History*, viii. p. 210.—Phasianus Impeyanus, *Index Ornithologicus*, ii. 632.—Lophophorus Impeyanus, *Gould's Century*, Male and Female.

THE splendour and changeability of the tints on the male of this bird, it is almost impossible to describe, either by words or the pencil. The greater proportion of the plumage is of varying hues of green, steel blue, violet and golden bronze. The texture is very dense and metallic looking, the feel soft and velvety. Upon the head there is a crest of feathers, composed of a naked shaft, with an oval tip of a similar texture with the rest of the plumage; this appears capable of erection at pleasure, but in a state of rest seems to recline or bend over the hind head. The centre of the back is pure white, following the distribution of colour which we have observed in the

Euplocomi; the tail is plane, rounded, and of a bright chestnut, clouded transversely, with bars of a duller tint. The legs are armed with strong spurs.

The female, Plate XXIII., is considerably smaller. The feathers of the head lengthening behind, the throat and fore part of the neck pure white; the rest of the plumage is of a pleasing reddish-brown, varied and mottled by spots and bars. There is no trace whatever of the resplendent colours of the male.

These splendid birds inhabit the alpine ranges of Nepaul and Himalaya, and with numerous others, almost as beautiful, enliven these stupendous solitudes; little is known of their habits, and they have not yet been brought to Britain alive. The first specimens which were seen, were procured by the exertions of Lady Impey, and died after having lived on ship-board more than two months.

Our next illustration represents the

Genus TRAGOPAN,—*Cuvier.*

The Horned Pheasant of Edwards and Latham, for the reception of which the Baron Cuvier established his genus Tragopan, long puzzled ornithologists, and we have it accordingly changed from one place to another, and find it ranking sometimes with Phasianus, sometimes with Meleagris, and at another with Penelope. The form of these birds perhaps approach as near to the next genus, or the Guinea hen, as any other. The plumage is very ample; the tail comparatively short; but the most prominent feature about them is a loose pendent skin which hangs from the base of the lower mandibles, and can be inflated at pleasure; and on the head, behind the eyes, two lengthened protuberances, which are also capable of enlargement and erection. The females, again, are of unobtrusive plumage, and resemble those of the last genus. This small group has been now extended to four species. The first we shall notice is

THE NEPAUL OR HORNED TRAGOPAN.

Tragopan satyrus,—Cuvier.

PLATE XXIV.

Horned Pheasant, *Edwards' Birds*, pl. 116.—Phasianus satyrus, *Temminck, Histoire Naturelle des Pigeons et Gallinacés*, ii. 349.—Horned Pheasant, *Latham's General History*, viii. p. 208.—Tragopan satyrus, *Cuvier, Regne Animal*, i. p. 479.—*Gould's Century.*

In looking over the various ornithological works in our possession for the history of these beautiful birds, we have been able to find literally nothing; their habits are completely unknown, or not touched upon. They seem confined to the more alpine regions, reach the limit of snow, and the present species has been brought from Thibet and Nepaul; the next has been received from Himalaya. It would be of great importance to ornithologists, if notes were made regarding all the birds composing this genus, Euplocomus and Lophophorus. Until we know a little more regarding them, it is impossible to assign to them with any certainty a place in any system.

This bird is about the size of a large domestic fowl. The bare skin is of a bright bluish-purple.

TRAGOPAN SATYRUS

(The Nepaul or Horned Tragopan)

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The feathers on the crown are lengthened, of a disunited texture, and are of a purplish-black, becoming deep crimson-red at the occiput. The back of the neck and bare skin in front are surrounded with deep black. The upper part of the back, neck, and all the under parts, are of a deep purplish cinnamon-red; the wings and upper parts of an umber brown, and the tip of each feather has an ocellated spot of white; these are largest and most conspicuous upon the flanks. The tail is rounded, but almost concealed by the tail-coverts, which are very ample, and spread over it in two ranges, each with a very conspicuous and white spot. The tarsi are spurred.

We have not seen the female of this species, but Dr Latham describes it as nearly similar to the male, but having the colours less bright. If this is correct, there must be a considerable difference from this and the female of the next species, figured by Mr Gould, which almost resembles that of Lophophorus.

THE GOLDEN-BREASTED TRAGOPAN.

Tragopan Hastingii.—Gould.

PLATE XXV. Male—PLATE XXVI. Female.

Tragopan Hastingii, *Gould's Century.*

This is another very beautiful species, about the same size with the last, and figured and described by Mr Gould in his Himalayan Century. The horns and wattles are of the same bluish-purple. The crown is furnished with a lengthened crest of the same kind of disunited or hairy-looking feathers, pure black: the back of the neck, upper part of the back and shoulders, are of a deep uniform purplish-red: the wings, and whole of the upper parts, except the tail-coverts, are of a deep wood-brown, each feather having an ocellated spot of white, surrounded with black, most prominently conspicuous on the lower part of the back and tips of the secondaries. Immediately below the naked wattles there is a patch of brilliant golden-orange; the feathers composing it narrow and lengthened, and of a hard horny consistence, their points disunited, stretching over, and very conspicuous upon the deep black which covers the rest of the under parts.

TRAGOPAN HASTINGII

[illegible]

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TRAGOPAN HASTINGII
Female
Native of Himalaya.

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The tips of each feather covering the breast and belly are marked with a large white spot, with the dark shaft running through. The tail is black, clouded with brown; the coverts do not extend so far over it as in the last, and are of a yellowish-white, with a narrow bar of black at the tip of each.

The female given by Mr Gould, and represented on our Plate XXVI. is entirely of a dull umber-brown, marked with a variety of dark bars and waves. The feathers of the hind head are of the usual texture, and are slightly lengthened behind. Neither wattles nor horns are apparent.

Our next Plate represents a modification of this form in

BLACK-HEADED TRAGOPAN.

Tragopan melanocephalus.—GRAY.

PLATE XXVII.

Satyra melanocephalus, *Gray's Illustrations of Zoology.*

MR GRAY has given a representation of this bird in his Illustrations, from one of General Hardwick's drawings. It differs from the others in the want of any naked appendages to the head or throat, and in the head having a large crest, which is represented rising from the crown in erect feathers, with disunited webs, from the nostrils to the hind head: it is of a deep black, inclining to purple at the tip, and the whole of the head, cheeks, and throat are of the same colour, whence Mr Gray has taken his specific name. The plumage bears a strong resemblance to the others, but we can give no detailed description of it, or any information regarding its habits. A fourth species is also figured by Mr Gray, under the name of *Satyra Pennantii*, which is the last of the known species belonging to this division.

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TRAGOPAN MELANOCEPHALUS.

(Black Headed Tragopan)

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Genus NUMIDA, *Linnæus.*

The last form which we have to describe in this Family is the *Guinea Fowl*, as they are generally termed, constituting the genus *Numida* of Linnæus. It contains only three or four species, all natives of Africa, and some of them were known to the ancients. During the zenith of the Roman Empire they bore a high value at the public feasts, and with its decline were for a time lost to Europe, to which they were again most probably introduced by the early Spanish navigators. Their plumage is very ample, their form compact and huddled together, and more formed for abode on the ground than for flight. The bill is curved and strong. They are gregarious, and roost on trees. We have figured as examples

NUMIDA CRISTATA
{ The crested Guinea Fowl }

Native of the Great Namaquas Country

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Lizars sc

NUMIDA MELEAGRIS

(The Common Guinea Fowl.)

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THE COMMON GUINEA FOWL.

Numida meleagris.—LINNÆUS.

PLATE XXIX.

Numida meleagris, *Linnæus*, *Latham*.—Peintade, *Buffon*.—Peintade Méléagride, *Temminck*, *Pigeons et Gallinacés*, ii. p. 431.—Guinea Pintado, *Latham*, *General History*. viii. p. 144.

THIS beautiful but rather clumsily formed bird is very generally known. As its name proclaims, it is a native principally of the Guinea coast, although it is also found in various other parts of Africa, and is mentioned by both Sparman and Le Vaillant as occurring near the Cape of Good Hope. They are difficult to raise from the ground, but, when pressed, fly with a powerful flight, and for a considerable distance. They live in flocks, the amount of their broods, but at some seasons assemble in hundreds, when their noise in going to roost upon the trees is grating, and almost stunning. In this country they are kept in the poultry-yard, both for the sake of their young and eggs; but being very quarrelsome to other poultry, and possessing great strength, they have often to be sacrificed to the preservation of the rest, or to be separately confined.

Several attempts have been made to turn them out in preserves, but this has never been persevered in, from their driving away and persecuting every other game. The plumage sometimes varies in being pure white.

Another species is described under the name of the Mitred Guineafowl, *N. mitrata*. It is said to be found in Madagascar, and is very closely allied to the common bird, differing chiefly in the ground colour of the plumage being darker, and in the spots being larger. The cry and habits are nearly similar.

We have now seen most of the members of this useful family; but, as we mentioned at the commencement, they are not arranged in the order they should properly stand. This, even now, we may be unable to do as we should finally desire, having not had an opportunity of examining minutely all the forms, or of arranging the other families which compose this order; but the following short table will serve as some guide how they should be placed.

The Rasores, or third order of birds, contains the families *Pavonidæ*, *Tetraonidæ*, *Cracidæ*, *Struthionidæ*, *Columbidæ*.

The family *Pavonidæ* contains the genera and sub-genera.

Pavo.
  Meleagris.
  Polyplectron.
  Argus.
Phasianus.
  Gallus.
Euplocomus?
Lophophorus.
  Tragopan.
Numida.

These are the genera at present established; it is, however, probable, that one or two sub-genera will still be found necessary, particularly in *Phasianus*.

The opinions regarding whether *Pavo* or *Phasianus*

should stand as the typical form, are at variance among our ornithologists. Mr. Vigors, in his arrangement, proposes the latter, Mr. Swanson *Pavo*, which for the present we have adopted. Looking at the forms of both, we find the tarsus and foot of nearly equal proportional strength, the hallux articulated above the plane of the foot, but in *Pavo* proportionably shorter, and the nail short. In this form, also, flight, from the unwieldiness of the plumage, is seldom resorted to, except in extremities; and the tail cannot be used in directing it. In *Phasianus* flight is often resorted to, and is powerful, though not capable of being long sustained, and the tail is used in directing it: it therefore deviates more from the peculiarities of the order. The other forms are more difficult to fix. We are uncertain, whether *Euplocomus* should not only form a sub-genus of *Lophophorus*, and of the situation of *Tragopan*. In both, the attributes of flight and perching are more extensively used. *Numida*, again, seems to connect the next family, by its alliance to the partridges, in the form of the tail and feet, harsh cry, and general habits.

The more extensive examination of the whole order, will, we trust, enable us, ere long, to solve all these difficulties; and we now prefer mentioning them as they have occurred, to leaving them altogether unnoticed.

At the conclusion of this volume, it has occurred to us, that a few observations on the more Common and Useful Varieties of POULTRY, *and the* POULTRY YARD, *might not be unacceptable.*

THE name Poultry is derived from the French word *Poulet*, and comprehends all the domestic varieties which we are in the habit of rearing for the table, whether they be Land or Water Birds.

COMMON OR BARN-DOOR FOWL, AND TURKEY.

THE most approved breed of the Common Fowl, is procured from the Dorking Cock, crossed with any Domestic Hen. The Dorking is very frequently distinguished by the peculiarity of possessing five toes on each foot, by their pure white colour, and their superior plumpness, with delicacy of flavour and whiteness in the flesh. Black or Speckled Hens are, however, esteemed better layers, and, in our experience, are less inclined to sit than most other varieties; which is particularly the case with the black breed of Poland.

When the rearing of Poultry is entered upon, on a moderate scale, care should be taken to select a warm well sheltered apartment, for their lodging in during the night, and for placing the nests for laying their eggs in.

The nests, for the purpose of laying in, may be arranged in tiers, one above another, in chequers, and may be constructed of wood, filled with straw or hay, once a-week—cleanliness in this and every particular being very essential. They should have a foot-board in front, for the purpose of the birds perching easily into them, and a fillet in front, to hold in the straw; and the situation in the apartment ought to be darkish rather than light, on account that Hens do not like to be disturbed in this operation. They should also be supplied with a ladder or stick, to assist them in perching up, as care should be taken not to injure the bird in its passage to the nest, when about to deposit her egg.

Nests prepared for the business of incubation, should have moveable gratings to place before them, to prevent the intrusion of other Hens while the mother is sitting. This grating must be taken off in the morning, when the other Fowls in the yard are being fed, the noise of which operation will, in general, excite the mother to rise and feed also; but should she delay to get off her eggs, she may be removed carefully, and placed near to the feeding board, when, after having

satisfied herself, she will return to the nest, and the grating is to be replaced. She will not require food again till next morning at the same time. In this manner we have attended to half a dozen Hens and a couple of Turkeys, engaged in the process of incubation at the same time; the operation of removing and replacing the whole, not occupying more than half an hour each morning, and the birds, without the least confusion, all again set upon their respective nests. The attention incident upon these creatures at this time is very interesting; in a day or two, they become so familiar, as to permit themselves to be handled without fear, apparently conscious that no harm is meant; and as the period when the chick is destined to emerge from the shell approaches, they become more cautious and solicitous, that no injury shall befal the tender cases which envelope their future hopes.

The time which a Common Hen sits is twenty-one days, that of a Turkey and Duck about twenty-nine or thirty days.

On the day previous to being hatched, the chirp of the bird in the shell proclaims, both to the attendant and parent, that the young are about to make appearance; and, on the day following, if all goes well, the whole brood will be found rolling amongst broken fragments of their late frail tenements. The mother is, at this juncture, to be handled with very great care and tenderness; she is to be removed to the feeding board,

where her anxiety will only permit of a very momentary absence, during which the shells are to be removed, and a small quantity of fine meadow hay inserted into the bottom of the nest, the chicks being previously held in a small basket till the return of the parent, who instinctively makes for and occupies her former abode, no doubt sufficiently alarmed at the apparent absence of her young, but which fear is soon removed, by their being placed one by one under her. We have repeatedly experienced the value of this precaution, in saving the chicks from being overlaid, through the restless anxiety of the mother, to secure the brood under her fostering wings, after feeding herself.

It is of great consequence to have a proper quantity of dry sand or ashes near the feeding-board, in which the sitters may rub themselves, in order to disengage any vermin adhering to their bodies, causing such restlessness, as in some cases to induce them to desert their charge; and along with this requisite, water in abundance must be provided.

We quote, from the interesting work of M. Bucknell, Esq., the following account of the progressive stages of life, as developed in the egg of a Common Hen:—

On the *third day* the embryo organization of the skull, brain, heart, and blood, is perceptible by the aid of a magnifying glass.

Fourth day—The pulsation of the heart is distinguishable by the naked eye.

Sixth day—The chief vessels and organs rudimentally formed; the pulsation and circulation of blood apparent.

Ninth day—Intestines and veins formed, and the deposition of flesh and bony substance commenced; the beak for the first time opens.

Twelfth day—The feathers have protruded; the skull has become cartilaginous; and the first voluntary movement of the chick is made.

Fifteenth day—Organs, vessels, bones, feathers, closely approaching in appearance to the natural state.

Eighteenth day—Vital mechanism nearly developed, and the first sign of life heard from the piping chick.

Twenty-first day—The chicks break the shell, and in two or three hours are quite active and lively.

We have perused various modes of tending and feeding the young brood, upon its first appearance, but have found none more successful than the following:—

The parent is to be removed, along with the young, to a box or other receptacle, under cover, about four or five feet square, and eighteen inches deep. She, with the brood, are to be placed in a small coop, inside the box, so that she may be secured from treading upon them. A little soft hay should be put into the coop, and some dry sand or earth in a corner of the box, and the food placed within reach of both.

The coop may be constructed in the following manner:—A wooden frame, of eighteen inches square, with one door in front, in two halves, in the form of a grating, to permit of the chicks getting easily out and in for their food, &c., and another door, outside of that, for shutting all in at night. Our own wooden frames are covered with coarse canvass, which is both lighter and cooler, than if constructed altogether of boards. For Turkeys the dimensions must be proportionally larger—about two feet square—formed in the same way. To prevent the other Poultry having access to the young brood, there should be a grating in front of the coop, in which the food and water is to be placed, and, in the course of the first or second day, the chicks will find their way to both. The vessel containing the water should, of course, be very shallow, with a few pebbles placed in it to prevent the birds getting wet—precautions which, although obvious, are sometimes not thought upon. Being economists in our way, we have constructed very suitable coops out of old tea-chests.

At this stage of life many are the odd condiments recommended; but the food should consist of coarse oat meal, or bruised grits, for the chicks, with oats for the mother. In a few days, a little soft boiled rice may be mixed with the meal, and they will have no objection to a few small worms, and a little chick-weed occasionally. We have fed our Turkeys most successfully

in the same way, with only substituting bread and milk, instead of worms; and chopped cresses or turnip shaws, in place of the chick-weed. Both will be the better of a little fine gravel and some particles of lime thrown in their way.

Generally speaking, the chicks should only get into their power such a supply of food at a time as they can nearly consume at once; for if more is placed before them, it is trodden down and wasted; but care should be taken that they receive that little very often—at least five or six times a-day. The chicks of Common Fowls should not get out of the box for at least a fortnight, and Turkeys fully three weeks, during which time the parents are mostly to be confined to the coop, unless the weather be very fine, in which case both may be permitted a little liberty.

The Turkey is generally thought to be a tender bird when young, and difficult to be reared, although in our experience this is not the case. Our breed is the pure white variety; and, the first season, the hen hatched and brought to full maturity fifteen birds. In her second year, she and one of her daughters reared about thirty, which were fed up to full size. The old lady deserted during the existence of the charge, and commenced laying eggs, which were consumed in the family. This is the third season, and the mother and daughter, at its commencement, very early in spring,

hatched only nineteen between them. The old bird again deserted her young, having handed over her charge to the junior parent, after which she laid and hatched twelve eggs, nine of which are all, at present, strong healthy birds, with every promise of being brought to full maturity of size.

In the successful management of this bird, much depends upon continued care in keeping them perfectly dry and warm, particularly during wet, moist, or hazy weather, with very frequent small supplies of the food already recommended. When they come to be about full size, they will be found to be even more hardy, and stronger than other common poultry, frequently roosting upon trees, in the open air, during the night, and braving the roughest and most inclement weather with impunity.

It is singular, and very interesting, to contemplate the quick-sightedness of the chick, about two or three weeks old, in capturing flies, and all sorts of small insects, as articles of food, while they are needling their tiny bodies through the grass, or brushwood of any kind. We were this season much amused, while watching our beautiful little brood stripping off the small green insects which were infesting our rose bushes.

We have already said, that we have found simple food most advisable for these birds when young, and we cannot refrain from deprecating the use of all

pungent articles, such as pepper, of all sorts. Chopped nettles are also recommended, but will be found a most annoying food. We, on one occasion, ventured upon a trial of them; but we shall never forget the pain which was produced in the mouths of these tender little creatures, from the sting of this noxious weed.

Some sort of net or grating should cover in the box, to prevent the Hen, when out of the coop, from leaping or flying over, in her restless anxiety, which increases daily, until set at large with her little brood. The box may either be placed in the open air or in the house, according to the state of the weather and season of the year.

We have said, that a board should be used for placing the food upon, whatever it may consist of, being preferable, in our opinion, to a trough, in which the food is apt to get sour, while the board does not labour under that objection, and can be readily cleaned.

All descriptions of Poultry are the better of being fed up generously from the very shell, and we prefer the flesh of those brought up at large, to those which are artificially fed, or *crammed*, as the phrase is. We have found a mixture, neither too moist nor too dry, of boiled potatoes and barley, or pease meal, equal parts, excellent feeding, either for producing eggs, or good sound flesh for the table; and this mixture seems to suit all varieties, whether Land or Water Poultry: it

has the recommendation of being easily and universally procurable, and not over expensive; and, with this, one feed of good corn, in the middle of the day, will be advisable and sufficient. In the absence of potatoes, the two sorts of meal just mentioned, with a third part of sharps or fine bran, will make a suitable mess.

The Poultry Yard should be enclosed in such a manner, as to render it convenient for confining the birds when required; but the more they are at liberty beyond its narrow range, the better for their health at all times, on account of the quantity of green food and insects, requisite to make up their proper nourishment.

Before dismissing this portion of our subject, and commencing with a short account of the Domestic Water Fowls, we quote the following from the work of the celebrated White of Selborne:—

"In so extensive a subject, sketches and outlines are as much as can be expected; for it would be endless to instance, in all the infinite variety of the feathered nation. We shall, therefore, confine the remainder of this letter to the few Domestic Fowls of our yards, which are most known, and therefore best understood. And first, the Peacock, with his gorgeous train, demands our attention; but, like most of the gaudy birds, his notes are grating and shocking to the ear: the yelling of cats, and the braying of an ass, are not more disgustful. The voice of the Goose is trumpet-like and clanking; and

one saved the Capitol of Rome, as grave historians assert: the hiss also of the Gander is formidable and full of menace, and 'protective of his young.' Among Ducks the sexual distinction of voice is remarkable; for, while the quack of the female is loud and sonorous, the voice of the Drake is inward and harsh, and feeble, and scarce discernible. The Cock Turkey struts and gobbles to his mistress in a most uncouth manner; he hath also a pert and petulant note when he attacks his adversary. When a Hen Turkey leads forth her young brood, she keeps a watchful eye; and if a bird of prey appear, though ever so high in the air, the careful mother announces the enemy with a little inward moan, and watches him with a steady and attentive look; but, if he approach, her note becomes earnest and alarming, and her outcries are redoubled.

"No inhabitants of a yard seem possessed of such a variety of expression, and so copious a language, as Common Poultry. Take a chicken, of four or five days old, and hold it up to a window where there are flies, and it will immediately seize its prey, with little twitterings of complacency; but if you tender it a wasp or a bee, at once its note becomes harsh, and expressive of disapprobation and a sense of danger. When a Pullet is ready to lay, she intimates the event by a joyous and easy soft note. Of all the occurrences of their life, that of laying seems to be the most important; for no sooner has a Hen disburdened herself, than she rushes

forth with a clamorous kind of joy, which the Cock and the rest of his mistresses immediately adopt. The tumult is not confined to the family concerned, but catches from yard to yard, and spreads to every homestead within hearing, till at last the whole village is in an uproar. As soon as a Hen becomes a mother, her new relation demands a new language; she then runs clocking and screaming about, and seems agitated as if possessed. The father of the flock has also a considerable vocabulary; if he finds food, he calls a favourite concubine to partake; and if a bird of prey passes over, with a warning voice he bids his family beware. The gallant chanticleer has, at command, his amorous phrases and his terms of defiance. But the sound by which he is best known, is his crowing: by this he has been distinguished in all ages as the countryman's clock or larum, as the watchman that proclaims the divisions of the night. Thus the poet elegantly stiles him:

> '—— the crested Cock whose clarion sounds
> The silent hours.'

"A neighbouring gentleman, one summer, had lost most of his chickens by a Sparrow-hawk, that came gliding down between a faggot pile and the end of his house to the place where the coops stood. The owner, inwardly vexed to see his flock thus diminishing, hung a setting net adroitly between the pile and the house, into which the caitif dashed, and was entangled. Resentment suggested the law of retaliation; he there-

fore clipped the Hawk's wings, cut off his talons, and fixing a cork on his bill, threw him down among the brood-hens. Imagination cannot paint the scene that ensued; the expressions that fear, rage, and revenge inspired, were new, or at least such as had been unnoticed before: the exasperated matrons upbraided, they execrated, they insulted, they triumphed. In a word, they never desisted from buffetting their adversary till they had torn him in a hundred pieces."

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THE PEA FOWL.

We cannot, in this place, resist the opportunity now afforded, of noting down some circumstances which fell under our own observation, regarding the sagacity of a favourite Pea Hen, generally supposed a very wild bird:—In her third year, and very early in spring, the weather being most unsettled and stormy, she commenced the process of depositing her eggs, the first of which she dropped in a situation perfectly open and unprotected, the consequence of which, as might have been expected, was its immediate destruction by the Magpies. Of this blasting of her hopes, however, she was unconscious; and she sat perched, during a fearful night, upon the naked branch of a high tree, watching over the precious deposit. Next day she soon discovered her loss, and immediately selected a more secluded spot for her future operations, in the immediate view, and about fifty yards from our dwelling-house. We used the precaution to cover this second egg with the dried leaves of the beech tree. The third day she not only deposited another egg, but added some more leaves herself, which we encouraged sparingly,

lest we should cause her to desert her charge. Six eggs were in this way deposited and secured, and which, with the one destroyed at first, made seven, four of which were hatched. During the long period of hatching, in the most inclement season, exposed to very severe weather, we resolved to run the risk of endeavouring to protect the devoted bird. The first day we put up a branch or two over the spot she had chosen; then a few more; and during a pitiless night, a complete awning was erected, consisting of a piece of matting, which screened her from the incessant rain and wind, like an umbrella. During all these operations the bird continued to sit upon her nest, apparently conscious of the care and sympathy exerted in her behalf. It would thus appear, that with proper precaution, this bird may be managed with nearly as much freedom as the Common Domestic Fowl, and instead of being a *rara avis* in our yards, it might form a profitable and highly ornamental addition. The flesh of the young bird for the table is, in our opinion, exquisite; much superior to that of the Turkey, resembling more that of the Common Pheasant. Although this bird be more independent of regular supplies of food being held up to it than other Domestic Poultry, yet, when young, the Chicks should be repeatedly attended to, and the same food which we have recommended before, namely, oat meal, a very little moistened, will be found very suitable for them.

GUINEA FOWL.

We purposely pass over the breeding and rearing of Guinea Fowl, with only a very few observations, our experience being, that it is a bird which retains too much of its original wild nature to be bred and kept with advantage. It is easily made to forsake the nest, which the Hen secretes with great care and adroitness, generally in the midst of standing corn, so that, in most cases, it falls a sacrifice to the reaper's operations, or is destroyed when they are upon the field. We once reared, at the latter end of the month of September, a large flock of seventeen, under a Common Hen, from eggs got in such circumstances, the proper parent, being scared, having deserted them; and we were most successful in bringing the whole brood to nearly the size of their foster mother, when a distemper, not understood, and which it baffled all our attempts to arrest, carried them off one by one, till at length the Hen, tired out, forsook the last three or four remaining birds, the strongest of the brood; but, to our grief and disappointment, even these also became victims to the same fatal malady. Before the birds began to droop, they were very strong and promising; but the lateness of the season must have been very trying to them, and most probably the cause of the illness, which proved so destructive.

DOMESTIC WATER FOWL.

DUCKS.

Geese and Ducks are our most common domestic Water Fowl, and both may be reared with advantage, and, in our experience, without much trouble. Ducklings may be brought out either under a natural mother, or a Common Hen; and, during the first week or two, should be managed in a manner similar to that recommended before for Turkeys and Common Fowls.

On the second or third day, they acquire considerable strength, and in a couple of weeks, are nearly independent of all care, running about, in all directions, after grubs and insects, if within reach. They should be kept from much exercise in water for fully three weeks, however, and ought not to be permitted to get wetted by rain, from which they suffer considerably at this tender age.

There are various breeds of this most useful Fowl, amongst which may be mentioned the Aylesborough, the White or English, and the Dark Brown, approaching to the plumage of the Common Wild Duck.

The presence of a small running stream of water, or a wholesome pond, is of course indispensable in the rearing and keeping of these birds to advantage, and without trouble, for without this they are miserable dirty looking objects; while, on the contrary, nothing can exceed the interest which arises from looking at their droll evolutions, and beautiful gestures, in their own natural element.

Ducks are profitable as layers of eggs, of which they deposit prodigious numbers, commencing early in spring, and seldom leaving off the operation, daily, till towards autumn; and although their eggs are not esteemed so highly as those of the Common Fowl, they are most useful in many domestic purposes. Their food may consist of the same materials as that already mentioned for other Poultry.

Ducks may be housed at night in the same apartment with other Poultry, care being taken to protect them from the droppings of the birds perched upon the roosts above them, and a proper comfortable bed of straw strewed on the ground below, for the Ducks to rest upon; the heat arising, and ascending to the other birds upon the roosts, we believe, benefits both.

DOMESTIC WATER FOWL.

GEESE.

As we have no great experience in the rearing of Geese, we shall quote from a very useful work, in two volumes, by R. W. Dickson, M. D., London, 1805:—

"There are several distinct breeds of Geese kept in different places; but the largest and most useful sort, whether for the purpose of food or feathers, is the *common breed.*

"In the choice of store Geese, care should always be taken to procure them as large in size as possible, and from places where they have been well kept. Geese, like most other birds, begin to lay in the spring months; and the earlier this happens the better, as the price of early green Geese is generally high, and in some cases it may be possible to have a second brood. Both these purposes may be promoted by letting them be well fed with oats, grains, or some such kinds of food at the

period. The Goose generally lays from eight to twelve eggs. It may be known when Geese are about to lay, from straw being frequently picked up and carried about by them. The length of time of sitting is about thirty days. When Geese are inclined to sit, they generally show it, by remaining on their nest after laying a considerable time. In this case, a proper quantity of eggs, as from ten to twelve, should be placed in the nests, and something put before them, so as to prevent the Geese from being much seen. They should also have plenty of food, sand, and water, near them, in order that they may not have to remain long off the nests, and in that way let the eggs be too much cooled. The Ganders should be left with them as guards. When the weather is warm, they generally hatch rather sooner than when it is cold. After the Goslings are hatched, the best method is to let them remain with the Goose, especially where they are strong, in some warm sunny place, that is well secured against the entrance of rats, and all other sorts of vermin, and which is properly supplied with water; being well fed with the crumbs of bread, grits, wheat, and some chopped clivers. They should remain in this confinement until they are grown strong, and capable of following the Goose with ease; they may then be put into a small field, or paddock, where the grass is short, till they are fit to be turned out with the Geese. When they are weakly, it is customary to feed them in the house, with bread, soaked in

milk, or a little barley-meal, &c. Where this is done, they should, however, always be put under the Goose again, immediately after such feeding, and handled as little as possible, warmth in this stage being the most essential article in rearing them. They should never be suffered, while very young, to go into the water, as the cold soon destroys them.

" The practice in Lincolnshire, where vast numbers of these birds are annually produced, is for their nests to be made for them of straw, and confined, so as that the eggs cannot roll out when the Geese turn them, which they do every day. When near hatching, the shell is broken a little against the beak or nib of the Gosling, to give air, or to enable it to receive strength to throw off the shell at a proper time.

" The time of plucking them is about the beginning of April, when the fine feathers of their breasts and backs should be gently and carefully plucked. Care must be taken not to pull or interrupt their down or pen feathers.

" The quills should be pulled five out of a wing. They will bear pulling in thirteen or fourteen weeks again, or twice in a year: the feathers three times a-year, of the old Geese and Ganders, seven weeks from each pulling. The young Geese may be pulled once at thirteen or fourteen weeks old, but not quilled, being hatched in March. But when late in hatching, the brood Geese should not be plucked so soon as April,

but the month after. When well fed with barley and oats, they thrive and do better, and their feathers grow faster, and are better in quality than where it is omitted. They must constantly have plenty of grass and water.

"In many parts of this fenny district, vast advantage is made by the frequent plucking of the Geese. At Pinchbeck, it is the practice to pluck them five times in the year, as at Lady-day, Midsummer, Lammas, Michaelmas, and Martinmas. The feathers of a dead Goose are worth 6d., three giving a pound. But plucking alive does not yield more than 3d. a-head per annum. Some wing them only every quarter, taking ten feathers from each Goose, which sell at 5s. a thousand. Plucked Geese pay in feathers 1s. a head in Wildmore Fen.

"In the fattening of *Green* Geese, care should be taken that a little green food be given, along with the oats or other grain, that may be employed for the purpose when they are put up, and that they be well supplied with water and sand. A fortnight or three weeks is long enough for this purpose, if they be well and regularly fed; but, in the fattening of the older Geese, there will not be any necessity for the green food. The place in which they are confined, with this view, should neither be too light, nor too public in its situation, as they do not feed so well, where these points are not attended to. They should likewise be

at a distance, so as to be out of the hearing of the old or store Geese.

"Besides the benefits that may be derived from Geese in the feathers and the birds as food, it seems not improbable, but that they might be made to produce a considerable advantage in the way of manure, if managed under a system of constant littering with straw, fern, or some other substance of the same kind, as from the great quantity of grass they consume, the discharge in the night is very considerable."

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